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Abnormal Psychology

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ABNORMAL PSYCHOLOGY

*A Clinical Approach to
Psychological Deviants*

7 11 1947

BY

JAMES D. PAGE

*Associate Professor of Psychology
Director of the Psychological Clinic
Temple University*

NEW YORK AND LONDON

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ABNORMAL PSYCHOLOGY

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TO MY WIFE

PREFACE

This is a book about abnormal people. Written at a level suitable for undergraduates with a limited background in psychology, it represents an attempt to summarize our present knowledge concerning the causes, symptoms, treatment, and outcome of the psychoneuroses, psychoses, mental deficiencies, and antisocial personalities.

In general, the presentation of the material conforms to that found in the usual introductory textbook of abnormal psychology, but a few innovations, based on the author's clinical and teaching experience, have been introduced. Wherever possible, the reactions of mental patients and normal individuals have been compared so that the student may better evaluate the place of abnormal behavior in the whole continuum of human behavior. Since most students will have more contacts with psychoneurotic than with other types of psychological deviants, several chapters have been devoted to the psychoneuroses. A chapter on antisocial personalities, including delinquents, criminals, and psychopaths, has been added to complete the roster of personality misfits in society. Of special significance is the inclusion of recent statistical findings with respect to incidence and outcome. The traditional chapters on sleep and dreams have been omitted because these are normal phenomena. However, material on sleep and dreams pertinent to abnormal psychology has been included.

Various viewpoints have been presented on controversial topics, but the author has not hesitated to express his own interpretations and conclusions. Readers partial to environmental or psychogenic interpretations of mental disease may not agree with the emphasis on the importance of genetic and constitutional factors in the etiology of *certain* disorders. In this connection it might be mentioned that when the author first started to work with mental patients, he was strongly biased in favor of

environmental and psychogenic theories. However, after devoting more than ten years to the study of mental disease, he has been forced by the weight of clinical and experimental evidence to accept the doctrine that some individuals, because of their inherent constitutional make-up, are more predisposed than others to certain personality disorders. It should, however, be clearly understood that predisposed individuals are definitely not destined to become neurotic or psychotic. They are merely more vulnerable or susceptible to specific forms of abnormality than the average person and run a greater risk of developing a particular mental disease if exposed to unfavorable life situations. This genetic viewpoint is not new. All of the great psychopathologists of the past century, including Kraepelin, Janet, and Freud, have called attention to the significance of inherent constitutional factors in the production of certain personality disturbances. The element of fatalism associated with this doctrine has discouraged its popular acceptance, but in recent years an increasing number of psychologists and psychiatrists have been persuaded by the accumulating evidence to acknowledge the importance of inherent constitutional factors in determining susceptibility or resistance to certain mental disorders.

To the many students and colleagues who directly or indirectly contributed to the gradual development of this book, the author expresses his warm thanks. The psychiatric orientation of the material is the result of several years of pleasant association with the medical staffs of the New York State Psychiatric Institute and Hospital, the Kings Park State Hospital, the Rochester State Hospital, and the Rome State School. The author is especially grateful to Dr. C. H. Smeltzer and Dr. Carney Landis for their encouragement, counsel, and generous aid. Each in his own way has greatly facilitated the preparation of the manuscript. As a result of many stimulating conversations with Dr. Franz J. Kallmann, the author has obtained a better understanding of the genetics of mental disease. Dr. George G. Killinger read and corrected Chapter XVIII. Most of all, the author is indebted to his wife, Dorothy Skene Page, who assisted with every phase of the work.

The competent aid cheerfully rendered by the staff of the Sullivan Memorial Library of Temple University is gratefully acknowledged. Of the many persons who assisted with the secretarial work, the author would like to thank especially Miss Helen Long, Miss Ethel Braverman, and Mrs. Evelyn Hidy.

JAMES D. PAGE

PHILADELPHIA, PA.,
August, 1947.

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CHAPTER I

THE NORMAL AND THE ABNORMAL

If we were to examine the life records of thousands of individuals taken at random from the general population, we would find a common pattern running through the great majority. In their school years they were from slow to good students. A few of them completed college, but most stopped at an earlier level. As adults they entered a variety of skilled and unskilled occupations, exhibited satisfactory work capacity, and managed to earn adequate incomes. With respect to their social behavior, these individuals were, in the main, conformists. They played the usual childhood games, went to parties, fell in love, married, reared their families, and participated in the ordinary affairs of the community. They were capable of establishing satisfying relationships with other people, and their emotional and social reactions were essentially adequate and appropriate. Some were more popular than others, but all had their circle of friends and were accepted members of society. Although they did not greatly advance the welfare of others, neither did they jeopardize or interfere unduly with the security and happiness of their associates. They were essentially law-abiding citizens who respected and adhered to the rules and conventions of their culture.

In personality traits, naturally they differed from one another, but none were exceptionally excitable, seclusive, depressed, suspicious, dynamic, impressive, or otherwise very outstanding. They were the common varieties of human beings whose presence or absence in a crowd was not greatly noticed. Some led a richer or more intense emotional life than others and some were happier than others, but, for the most part, their affective experiences were not unique. Apart from sporadic outbursts of an innocuous nature, they managed to control their emotions. Although they had their share of frustrations, conflicts, and hardships, their lives were not greatly disrupted by their misfortunes. During

moments of stress, they proved to be fairly resilient and adaptable. Their inner mental life was, more often than not, one of tranquillity. These commonplace men and women who exhibited at least ordinary competence in self-management and got along reasonably well with themselves and their associates constitute the *normal*, or *average*, group. The great majority of the general population are normal people.

The Superior.—Scattered through the rank-and-file histories, there would be found a smaller group of individuals who deviated from the normal in a favorable or healthy direction. In contrast to the mediocrity of the normal group, these individuals were definitely superior in intelligence, personality, social adjustment, and emotional stability. Since there is a tendency for good qualities to go together, many excelled in more than one sphere. These superior men and women not only led wholesome, successful lives themselves but often contributed to the welfare and happiness of others through their inventions, achievements, and personal influences. Some extreme examples in this country were Benjamin Franklin, Jefferson, Lincoln, and Edison. Many less well-known people also belong in this category, since about 10 per cent of the general population are classed as superior individuals.

The Abnormal.—Among the unselected life records, there would also be found a small group of equally spectacular and unusual cases that deviated from the normal in an unfavorable or pathological direction. Included in this abnormal group would be individuals marked by limited intelligence, emotional instability, personality disorganization, and character defects, who, for the most part, led wretched personal lives and were social misfits or liabilities. These abnormal deviants, who constitute about 10 per cent of the general population (1), are usually classified into four main categories: psychoneurotic, psychotic, mentally defective, and antisocial.

FORMS OF ABNORMALITY

Psychoneuroses.—Individuals who “go to pieces” easily when confronted with a difficult or trying situation and exhibit a

variety of mental and physical symptoms that persist for several weeks or months are known as "psychoneurotics." Typical mental symptoms are anxiety, feelings of inner tension, restlessness, ideas of inadequacy, inability to concentrate, loss of memory, absurd fears, and obsessions. Physical symptoms, which are essentially repercussions of internal emotional disturbances, include headaches, upset stomach, excessive fatigue, and loss of sensory and motor functions. Psychoneuroses are relatively mild personality disorders that distress and inconvenience the patient but do not disrupt his social adjustments or interfere with his everyday activities to the point of necessitating supervision or compulsory commitment to a mental hospital. His personality remains intact and his grasp of reality is not distorted. Psychoneurotics know what they are doing, have a fair understanding of their difficulties, can distinguish right from wrong, and are legally responsible for their actions. Their behavior, though frequently annoying, is rarely offensive or a source of danger to others. Their work output may or may not be impaired.

When under great emotional stress, normal individuals frequently exhibit typical psychoneurotic symptoms but with two important modifications, namely, their reactions are appropriate to the stimulating situation and are of short duration. On the other hand, the reactions of the psychoneurotic are out of all proportion to the actual situation and may persist for months. A normal person who experiences a severe emotional shock may be speechless or paralyzed for a few minutes. He may faint, feel weak, or complain of irregular heart action or nausea. Soon, however, he regains control of himself and his symptoms disappear. Following a similar or milder emotional shock, a psychoneurotic may suffer for months from loss of voice, paralysis, general exhaustion, cardiac instability, or gastric upset. Faced with failure, a normal individual may be beset with temporary anxiety and feelings of inferiority, but a psychoneurotic may retain this attitude in exaggerated form all his life. Many normal individuals have a fear of germs and take reasonable precaution to avoid infection, but, unlike certain psychoneurotics, they do not wash their hands a hundred times a day, wear

gloves when handling money, or sterilize their cooking utensils before each meal.

ILLUSTRATIVE PSYCHONEUROTIC REACTIONS

Shortly after contracting a mild case of typhoid fever, a young married woman, who had had a "nervous breakdown" in high school, developed a pathological fear of germs. To avoid contamination, she ate only certain foods and always boiled her milk and drinking water. She found it hard to shake hands or handle her mail. To appease her, her husband had the house thoroughly disinfected and the walls papered. However, this had only a temporary ameliorative effect. After a few days she expressed the idea that the walls had not been thoroughly cleaned, with the consequence that there were millions of germs under the wallpaper. She refused to have her husband touch her because she never knew where he had been or what germs he might have picked up.

A freshman, who disliked school but had entered college at the insistence of his parents, slipped and fell while playing basketball. When he tried to get up, he found that he could not move his legs. He was taken to a hospital, where a complete medical examination failed to reveal any organic injury. The boy, nevertheless, maintained that his legs were paralyzed. Since the paralysis persisted for several weeks, his parents arranged for him to return home. After he had been under the care of his family physician for a few days, he gradually recovered the use of his legs but refused to return to college, where he had been unhappy and had done unsatisfactory work.

Mrs. K was a very childish woman who talked to her husband in baby talk and depended on him for everything. Whenever anything went wrong in her narrow sphere of affairs, she would cry and complain at great length. At about the time her daughter was developing an interest in parties and boys, Mrs. K began to exhibit various physical symptoms. Attacks usually occurred when the daughter had a date. Because of the attacks, the daughter was forced to stay home to take care of her mother. During an attack, the mother would complain of shooting pains in various parts of her body. The daughter and husband would put her to bed and then sit in the room with her, waiting for the attack to subside. At intervals Mrs. K would gasp,

"I can't stand it, I can't stand it," whereupon the husband and daughter would rub her wrists, stroke her forehead, and exude sympathy. After about an hour of such treatment the mother would feel better but would insist that the daughter sleep with her. She would frequently awaken the daughter during the night and go through the same procedure. Medical examination was entirely negative.

Psychoses.—Psychoses are severe mental disorders that tend to shatter the integration of the personality and disrupt the individual's social relationships. The behavior of the psychotic is too bizarre, unreasonable, and inappropriate to be understood by a normal person. It is necessary to supervise closely, or hospitalize, psychotic patients, because they are incapable of adequate self-management and their peculiar and unpredictable actions constitute a potential threat to the welfare of others. Psychotic individuals are so unbalanced mentally that they are not legally responsible for their actions. In the eyes of the law, they are *insane*. In psychoses, normal inhibitions and cultural restraints are severed, and the patient indulges his whims and phantasies unchecked by rules of logic, common sense, or social pressure. The wish is father to the thought, and the thought is omnipotent. The psychotic has only to think that he is a multi-millionaire or the beloved of some movie star, and it is so. A female patient claimed that she gave birth to a thousand babies a day. By special arrangement with God, they were transported to her direct from heaven by invisible parachutes. If a psychotic patient desires to die, he has only to say the word and he is dead. He may continue to eat three meals a day, but this inconsistency does not disconcert him. With complete sincerity he will tell you that he is merely an X-ray plate of his former self, that his real self is dead.

Unpleasant delusions and hallucinations are just as real. The patient who imagines that he is being persecuted by some secret organization is genuinely terror-stricken, and he flees from one city to another to evade his persecutors. When he is committed, their voices follow him to the hospital, and each day he spends hours in violent debate with these nonexistent voices. The guilt-laden patient who beseeches her physician to throw her in the

furnace is perfectly sincere and would make no protests if he complied with her request.

In their emotional reactions they show the same disregard for reality. Without any apparent cause, they become violently excited, depressed, or irritable. There is no logical relation between the motivating situation and the emotional response. Sad news from home may evoke laughter; good news, tears; or either may have no effect. Usually the patient is confused, bewildered, and disoriented. Speech is incoherent, and thought processes are retarded and ineffective. There is an inability to grasp new material, and memory disturbances are common. The final outcome may be a permanent impairment of the total personality, or the individual may make a surprising recovery with few, if any, residual symptoms.

The gap separating the normal from the psychotic patient is far greater than that between the normal and the psychoneurotic. It is easy for normal individuals to establish rapport with the psychoneurotic, to understand his symptoms, and to converse with him in normal fashion. On the other hand, normal people are completely baffled and somewhat frightened by the mental confusion, incoherent speech, weird actions, distorted thoughts, emotional outbursts, and hallucinations of the psychotic. It is practically impossible for a normal individual to carry on a reasonable and coherent conversation with a psychotic person, to understand his symptoms, or even to sympathize with him. The explanation for this lack of rapport lies in the fact that the bonds connecting the psychotic individual with his fellow men have been cut. The psychotic lives not in the world of reality but in his own private world. He is divorced from his associates, and the rules, customs, and happenings of the real world have no meaning or significance for him. His behavior is impervious to outside influences, and attempts to hold his attention or to modify his thoughts by persuasion, reason, or force are futile. He is so effectively insulated against the outer world by his psychosis that even intimate contact with the horrors and dangers of civilian bombings, in wartime, fails to affect him.

Dreams provide the main connecting link between the normal and the psychotic. The artificial world of dreams approximates

the real world of the psychotic. In their dreams, normal people accept without questioning the idea that they are famous, wealthy, persecuted, or unworthy. It does not strike them at all strange to converse with God or the dead, to die and to be reborn, or to be omnipotent. On awakening, however, they quickly dismiss these dreams as pure imagination and reenter the world of reality. In the psychotic, the frontier separating the real from the make-believe is destroyed; all is real. The dreamlike products of the psychotic mind are accepted uncritically and stoutly defended as absolute fact, even in the presence of convincing evidence to the contrary.

ILLUSTRATIVE PSYCHOTIC REACTIONS

On admission to the hospital, the patient reported hallucinations of taste and smell and ideas of persecution. He perceived peculiar vapors emanating from certain individuals. At night he heard voices saying, "Let's kill him." He stated that men talked about him and called him vile names. Symptoms were related in a monotonous voice with no show of emotion.

A quiet young college girl, who had always been a model daughter and an excellent student, gradually lost interest in her work and personal appearance. She refused to get up in the morning, dressed slovenly, stopped attending classes, and spent all her time in her room playing the radio or gazing outside in a preoccupied manner. When addressed, she responded in monosyllables, if at all. As long as she was left alone, she was extremely apathetic, but if pushed or thwarted, she would become irritable and mean.

An expansive middle-aged man was arrested for passing worthless checks. He claimed to be God, a multimillionaire, and the ruler of the universe. Examination revealed a positive Wassermann reaction.

A lawyer's wife who had formerly been an excellent mother suddenly became overactive and exuberant. She neglected her children, talked constantly in an incoherent fashion, spent money lavishly, and

firted indiscriminately with men. Eventually she became so excited and unmanageable that hospitalization was necessary.

Shortly after his wife divorced him, a skilled worker became depressed and attempted to commit suicide. When examined, he was agitated and overcome with feelings of guilt. He stated that he was responsible for all the misery in the world and was too wicked to live.

A young man was brought to a clinic by his parents because he smiled to himself for no apparent reason, talked incoherently, and showed bizarre behavior. Upon interview, the patient stated that he had found some radium and it was now in his head. When he was left alone, his behavior suggested that he was talking with some imaginary person. He would nod his head, listen, and then laugh softly to himself.

Mental Deficiency.—Mental deficiency is a general category which includes a variety of individuals who, because of subnormal or retarded mental development, are unable as children to profit from regular school instruction and as adults are incapable of adequate self-management or self-support. These individuals are also classified as *aments* or *feeble-minded*. Feeble-mindedness is differentiated from the mental deterioration that results from various psychoses by a deficiency of intelligence dating from birth or early life. Mental defectives are socioeconomic liabilities and responsibilities. The brightest can learn to read and to do simple arithmetic up to about the fifth-grade level if they are given intensive schooling until they are fifteen. As adults, they can be trained to do simple routine tasks that will contribute to their support, but they are incapable of adequate self-management in society. They can protect themselves against common physical dangers but are helpless when exposed to ordinary social dangers. If employed, they do not spend their earnings wisely. Their brighter associates find it easy to take advantage of them. Although not inherently delinquent or immoral, they are frequently guilty of petty crimes and sex offenses.

They do not fully understand the social significance of ~~their~~ actions and must be carefully supervised.

The dullest of the mental defectives never learn to walk, talk, or feed themselves. In adaptability to life situations they show less intelligence than animals, not even knowing enough to come in out of the rain. They would soon perish if they were not protected and cared for by others. Even as adults, they must be treated as helpless infants.

EXAMPLES OF MENTAL DEFICIENCY

An underdeveloped fourteen-year-old girl was brought to the clinic by her parents because they objected to the school authorities' putting her in a special class for retarded students. An examination of the girl's past life revealed that she had always been backward. She learned to talk and walk when three and had persisted in playing infantile games long after normal children of her age. She had required much more supervision and assistance than other children in the family.

When six, the girl had been sent to school, but she was so childish in her behavior that the school authorities delayed her admission for another year. She repeated the first grade. Although she was still doing unsatisfactory work at the end of the second year, she was promoted at the insistence of the mother. Since the girl was a placid, quiet, and well-behaved child, she was passed along from one class to the next, even though she was obviously incapable of doing the work. She was in the fifth grade at the time of examination, but educational tests showed that she was barely capable of third-grade work. Intelligence-test scores indicated that she had the mental ability of an average nine-year-old. Her social development was also retarded. She preferred to play with younger children and could not be trusted with household duties.

An eight-year-old boy was committed to an institution for mental defectives because his parents were unable to take care of him. He could not walk, talk, or feed himself and required as much attention as an infant.

A twenty-year-old man, who had spent most of his school years in a special class, enrolled with a brighter friend in the maritime service.

He could not read, but his friend filled out the necessary application forms. En route, on the train, his associates took advantage of his limited intelligence and suggestibility by selling him worthless articles and frightening him with tall tales of the sea. He arrived at the training station convinced that ship captains throw disobedient seamen to the sharks.

During routine examination, it was found that the man had been unable to do simple factory work. In addition to gross inaptitude, he frequently injured himself by getting in the way and handling tools carelessly. He had tried delivering newspapers but had to give it up because he could not make change and keep a record of his accounts. The only kind of work he had been good at was cutting lawns as a gardener's helper. On intelligence tests, he earned a mental age of ten.

Antisocial Personalities.—Included in this category are two overlapping, but more or less independent, groups that share a common propensity for antisocial behavior. One group is made up of convicted law violators, and the other consists of individuals with psychopathic personalities.

Depending on their age, law violators are classified from a legal point of view as *delinquents* or *criminals*. A small proportion of criminals are mentally defective, but the great majority possess average intelligence and some have superior mental ability. All personality types are found in the criminal group. Many first offenders who are convicted of accidental or culturally tolerated offenses, for example, traffic violations and bootlegging, have essentially normal personalities. Other criminals, in addition to being lawbreakers, suffer from psychoneuroses or psychoses. Among habitual criminals especially, there is frequently found a peculiar personality, termed a *psychopathic personality*. Although most individuals with psychopathic personalities are potential criminals, it is desirable to consider them as a separate group. Many of them manage to evade the law and hence are not, strictly speaking, criminals, and most criminals do not have psychopathic personalities.

Individuals classified as "psychopathic personalities" possess adequate intelligence, and exhibit neither the conflicts and anxieties of the psychoneurotic nor the delusions, hallucinations, and mental confusion of the psychotic. Many actually have very

pleasing personalities. Their abnormality is manifested in a lack of inhibitions and an incapacity or unwillingness to conform to ethical and social standards.

They are impulsive, selfish, emotionally unstable individuals who, from early childhood, make a practice of immediately satisfying their desires and impulses without regard to the consequences or the means. Since they are unconcerned with future consequences, their judgment appears faulty and they fail to profit from past experiences. Devoid of moral and social scruples, they do not hesitate to deceive and exploit their associates or engage in antisocial activities if it is to their advantage to do so. They are rebels of society who actively resist discipline and refuse to conform with social demands. As a result, they are in constant conflict with their environment. Their disregard for conventions and rules of human decency is not due to an inability to distinguish right from wrong. Intellectually, they know that their behavior deviates from the accepted normal pattern, but they have no desire to reform.

Over a century ago, Prichard (4), an English psychiatrist, described these individuals as *moral imbeciles*. He has contributed one of the best definitions of this condition:

There is likewise a form of mental derangement in which the intellectual faculties appear to have sustained little or no injury, while the disorder is manifested, principally or alone, in the state of the feelings, temper or habits. In cases of this nature, the moral and active principles of the mind are strongly perverted or depraved; the power of self-government is lost or greatly impaired, and the individual is found to be incapable, not of talking or reasoning upon any subject proposed to him, for this he will often do with shrewdness and volubility, but of conducting himself with decency and propriety in the business of life.

Since almost everyone has at some time been tempted to commit a crime or to engage in antisocial behavior, it is fairly easy for a normal person to identify himself with and, superficially at least, to understand the motives and actions of the delinquent, criminal, and psychopath. This leads normal individuals to assume an unfavorable and somewhat vindictive attitude toward

antisocial personalities. Rightly or wrongly, they believe that such individuals should be punished for willfully doing what normal individuals, though equally tempted, refrain from doing because such actions are detrimental to society and involve risk of detection and punishment. They feel that to permit a criminal to go free or receive a light sentence would not only be a miscarriage of justice, but also that such a policy would weaken the defenses of normal individuals against their own criminal impulses. By ostracizing and punishing the criminal, normal individuals are encouraged to hold in check their own antisocial inclinations and are indirectly rewarded for their good and moral conduct.

In recent years, a more objective and sympathetic attitude toward the criminal has gradually developed among informed people. It has been shown that the criminal and the psychopath, far from being free agents who voluntarily and schemingly undertake a life of crime for personal gain, are often helpless victims of constitutional, psychological, and sociological factors over which they have little control.

EXAMPLES OF ANTISOCIAL PERSONALITIES

Tony, who came from a broken home, started playing truant when thirteen. With some other boys, he spent the school hours hitchhiking and stealing things from the ten-cent stores. When fourteen, he ran away and managed to ride on a train for several hundred miles without a ticket. He lived for several weeks in a distant city, stealing food from grocery stores whenever he was hungry. He finally gave himself up and was sent home. To obtain spending money, he secured a job in a grocery store as an errand boy and doubled his pay by overcharging for deliveries. When he lost this job, he joined a gang of boys who made a practice of breaking into cars and stealing robes, packages, and tools, which they sold to an older man. He was eventually caught and sent to a reform school for 18 months.

When released, he obtained a job on a delivery truck and kept this job for six months. He then decided to return to school. He was somewhat older than the other boys in his class and soon started being truant. To obtain money with which to leave town, he burglarized an apartment house and with the proceeds went to another state

to escape probation. He was then sixteen but looked younger. Since he was not attending school, he was picked up for questioning.

The authorities got in touch with his divorced mother, but she refused to have anything to do with him, and he was sent to a juvenile institution for training. After a few months there, he ran away. Failing to find employment, he obtained money by burglary. He was apprehended and sent to a reform school for two years. Shortly after his release he met an older girl and married her. She left him after six months, and he started to drink heavily, soon losing his job. Unable to find employment, he returned again to burglary, was arrested, and sent to prison.

An affable, entertaining psychopath, who posed as a physician from a distant state, made the acquaintance of a thirty-year-old schoolteacher and, after a whirlwind courtship of a week, married her. To take care of honeymoon expenses and purchase medical equipment, he cashed checks totaling several thousands of dollars, endorsed by his bride and her father. All were returned marked "no funds," but the man gave a plausible explanation that was accepted by his bride, who made good on all the checks. Her father, however, became suspicious and started an investigation, which revealed that his son-in-law was not a physician and had a wife and child whom he had deserted a few weeks before meeting his second wife.

When confronted with the evidence, the pseudo physician readily admitted the facts and stated that he had deceived and married the schoolteacher because he loved her and wanted to make her happy. Up until the exposure, he had succeeded admirably in this endeavor, and his unlawful second wife willingly gave him a large sum of money to arrange for a divorce from his first wife. The man left to make the necessary arrangements and never returned.

THE ABNORMAL, THE NORMAL, AND THE SUPERIOR

To emphasize the differences between the abnormal, the normal, and the superior, each group has been described as a separate entity. At this point, it is necessary to examine more carefully their interrelationships. According to the *statistical criterion*, abnormality and superiority merely represent quantitative deviations from the normal or average. Individuals who possess an average amount of intelligence, personality stability,

or social adaptability are considered normal; those who possess considerably less are abnormal; and those who possess considerably more are superior. As is illustrated in Fig. 1, most individuals, on the basis of the statistical criterion, are normal. They are located at the center of the bell-shaped curve. As we proceed away from the center in either direction, greater and greater deviations from the normal are encountered, and the most extreme deviants are arbitrarily called "abnormal" or "superior,"

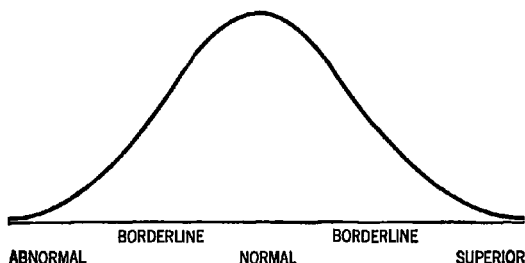


FIG 1—The relative distribution of abnormal, normal, and superior individuals in the general population. The distribution is continuous with no gaps between groups. The largest number of individuals are concentrated in the central or normal area, and the number gradually decreases as the extremes of abnormality and superiority are approached.

depending upon the social evaluation or the desirability of the considered trait.

Although the statistical criterion is useful and in many respects sound, it is based on the questionable assumption that all human variations can be expressed as quantitative deviations. Most traits are likely to be distributed in this fashion, but there are many exceptions. With respect to certain physical conditions, it is apparent that there is no continuity between health and disease. People fall into discrete groups; either they have measles, tuberculosis, cancer, or infantile paralysis, or they do not. The difference between the affected and the nonaffected is qualitative rather than quantitative. This viewpoint, which is known as the *pathological criterion* of abnormality, is also applicable to certain forms of mental disorders. For example, normal individuals do not appear to have the same kind of emotional and thought disturbances that are observed in some

mental patients, and they do not possess, even in mild form, the characteristic physical features of Mongolian imbeciles. The pathological criterion does not differentiate the normal from the superior group, but it is not improbable that qualitative differences also exist between these two groups.

Figure 2 represents an attempt to interrelate the abnormal, normal, and superior groups in such a way as to combine the

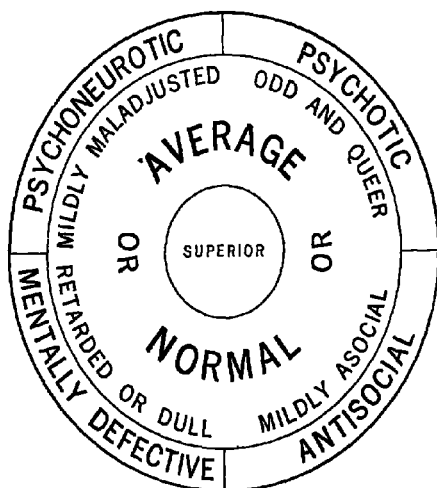


FIG. 2.—Schematic representation of the interrelationship between the four main types of deviants and the normal and superior groups. Radii from the center to the periphery indicate differences in degree.

statistical and pathological criteria. The concentric circles that separate the three groups suggest the possibility of qualitative differences, and the radii from the center to the periphery may be considered quantitative continuums. A further advantage of Fig. 2 is that the four major forms of abnormality are each assigned separate areas in the outer ring. This convention divides the total figure into four quadrants, or sectors, and facilitates a comparison of the abnormal, normal, and superior groups with respect to each form of abnormality.

The key trait in the mental-deficiency quadrant is intelligence.

Individuals who are so deficient in intelligence that they are subject to commitment to an institution for mental defectives constitute the outer perimeter of this sector. Between the mentally defective and the true normal or average are the retarded borderline individuals who frequently repeat grades in school and rarely rise above the level of semiskilled workers. Next are the normal group who possess average intelligence. Between the normal and the superior are the bright, and beyond the bright are the superior, who are as numerous as the mentally defective. Individual variations are also found within the superior group. The most outstanding, who constitute less than 1 per cent of the superior group in ability and achievement, are the gifted, or geniuses.

The key traits in the psychoneuroses sector are emotional stability and mental serenity. Those markedly lacking in these qualities are psychoneurotics, and those who possess these qualities in excessive amount are the superior. Between these extremes are the normal, who, depending on their proximity to the center or to the perimeter of the circle, are more or less stable and calm in the face of stressful situations. The personality-integration continuum of the psychotic sector ranges from the extremely well-balanced and rugged personality of the superior, through various degrees of normality, to the easily shattered and disorganized personality of the obviously psychotic on the perimeter. The hardened criminal and the severe psychopath make up the perimeter of the antisocial sector. The outer extreme of the normal group contributes the occasional or mild offenders. At the superior level are found individuals who not only adapt to ethical and cultural standards but go further and attempt by their efforts to advance the welfare and social development of their associates.

ABNORMAL PSYCHOLOGY AND RELATED FIELDS

Psychology.—Psychology is concerned with the study of the mental processes and behavior of all human beings, with emphasis on the normal. *Abnormal psychology* is a subdivision that is limited to the study of the mental processes and behavior

of abnormal people. Properly trained individuals who are more interested in the applied than in the theoretical or academic aspects of psychology are referred to as *clinical* and *consulting psychologists*. Clinical psychologists work mainly with children and adolescents in schools and clinics. Their duties consist of the administration of intelligence, educational, and vocational tests; the diagnosis and guidance of mental defectives; the correction of disabilities in school subjects; the treatment of speech defects and minor emotional and personality problems; and vocational guidance.

Consulting psychologists, like consulting engineers or physicians, are professional men offering specialized services. Some consulting psychologists specialize in the type of activities outlined above for clinical psychologists; others specialize in personnel and industrial problems or in the treatment of minor personality and emotional disturbances of children and adults.

Medicine.—The branch of medicine corresponding to abnormal psychology is *psychiatry*. Psychiatrists are physicians specializing in the study and treatment of mental disease. The more severe forms of psychopathology, with or without organic involvements, that necessitate the administration of drugs, surgery, hospitalization, or other medical procedures are properly the province of the psychiatrist. *Neurology* is the study of the development and function of the brain, spinal cord, and the rest of the nervous system. Mental diseases associated with lesions or dysfunction of the nervous system are more correctly referred to as *neuropsychiatric* disorders.

Psychoanalysis is a specialty within psychiatry that is particularly concerned with the investigation and treatment of the psychoneuroses. Psychoanalysts differ from psychiatrists in their rigid adherence to certain tenets concerning the origin and treatment of mental disorders. Only a very small percentage of psychiatrists are psychoanalysts.

The recent approach to the patient as a whole has resulted in a closer relationship between psychiatry and general medicine. It is now realized that physical symptoms may have both an organic and a psychological basis. Organic diseases are often complicated by emotional reactions that must be treated if the

patient is to recover completely, and unrecognized psychological disturbances often masquerade as physical diseases. It has been estimated that more than a third of the patients seen in general medical practice have no definite bodily disease. Their symptoms are essentially due to psychological and emotional causes. The recognition of the intimate interaction of mind and body has resulted in a new branch of medicine, that of *psychosomatic medicine*. Psychosomatic components are most common in such conditions as peptic ulcer, cardiac dysfunction, genitourinary diseases, allergies, respiratory disturbances, migraine, and hyperthyroidism (6).

Sociology.—The sociologist, together with the social anthropologist, is interested in the effect of cultural and social phenomena upon normal and abnormal functioning in the community. The emphasis in these fields is on the group rather than on the individual. A recent anthropological observation (2), which has been grossly misinterpreted by some people, is the finding that patterns of behavior that are considered normal in one culture may be regarded as abnormal in another. There is nothing spectacular about this. The same inconsistency is apparent in our own society. A man who kills a fellow citizen is executed as a murderer; if he kills a dozen, he is a mad fiend; but a soldier who kills a hundred of the enemy is rightly a hero.

Normality and abnormality can be defined only in terms of conformity to the will and welfare of the group and in capacity for self-management. A psychotic patient, who is committed to a mental hospital because he is unable to care for himself and spends all his time conversing with God, might have been regarded as a sacred personage if he had lived in some primitive society; but that does not make him any less psychotic. If transported to a favorable primitive culture, he would still be unable to care for himself and he would not conform to the conventions of the primitive society. During the Middle Ages, the feeble-minded were regarded in some quarters as messengers of God, and wise men listened to their idiotic mutterings for a clue to God's will; but that did not make them any more capable of self-management or any less feeble-minded.

Psychiatric Social Work.—This is a rapidly developing specialty that is concerned primarily with the investigation and supervision of deviants. Present-day social workers are professionally trained college graduates who serve as liaison agents between the deviant and the community. They are usually attached to the staffs of clinics, social agencies, hospitals, courts, and prisons but do most of their work in the community. The investigative part of their duties includes obtaining case histories and studying the home and neighborhood factors that may have contributed to the development of abnormal behavior. Supervision consists in counseling and aiding the abnormal in their attempts to become conforming, self-sustaining members of society.

Law.—The interest of the law in deviants is not limited to the criminal and the psychopath but extends to all forms of abnormality. As experts on mental health, physicians may recommend the certification and hospitalization of mental cases, but the final decision rests with the court. The commitment of a mentally defective or psychotic individual to an institution is a legal process. Patients cannot be detained in institutions against their will except by court action. State laws provide for periodic examination of locked institutions to guard against the unjust incarceration of a sane individual or the continued incarceration of a recovered patient. Laws also specify the status of the insane. A psychotic person who commits an illegal act is usually not punished as a criminal, but his freedom, rights, and privileges are seriously curtailed. In most states, the insane are deprived of their citizenship rights to vote or hold public office. They are not permitted to administer their affairs or to sign legal papers. Until they are adjudged sane, their interests are looked after by a special committee assigned by and responsible to the court.

About 10 per cent of the clients of legal-aid societies are psychoneurotic and "lunatic-fringe" individuals whose grievances are founded on mental and emotional distortions rather than facts (3). Unstable and eccentric personalities often create interesting medicolegal problems by their peculiar wills and injudicious financial enterprises.

Mental Hygiene.—This is essentially an educational program, with two fundamental objectives: (a) the prevention of mental aberration by sanitary psychological living and the early treatment of minor difficulties, and (b) the fostering of an objective and sympathetic attitude toward the deviant. At present this work is being conducted mainly by psychiatrists, psychologists, and social workers; but the teaching of healthy mental and emotional habits that lead to a happy and effective life should be incorporated in every school curriculum. Educational courses in physical hygiene have played a major role in improving the physical health of the nation. It is now time to consider mental health, since a healthy personality is certainly as desirable as a sound physique.

Education.—Since almost all varieties of abnormalities, with the exception of psychoses occurring in adult life, are noted in the classroom, it is essential for teachers to have some understanding of abnormal psychology and mental hygiene. Mental deficiency is largely an educational problem, and antisocial behavior usually has its onset in early life. Much can be done in the school to prevent and correct the development of neurotic and delinquent traits in children during the formative years if educators will give greater attention to the social, emotional, and personality development of students. Surveys conducted in public schools and colleges (5) indicate that from 10 to 15 per cent of students are in need of psychological counseling. Nor is the teaching staff immune. A surprising number of teachers have personality problems which not only interfere with their own personal happiness and adjustment but also create emotional disturbances in their students.

Religion.—Until comparatively recent times, the care of mental deviants was in the hands of priests. To the healing temples of ancient Greece and Egypt came the mentally diseased to be treated by incantations and religious rites. In the early days of Christianity, the abnormal were considered to be possessed by the devil and it became the duty of the Church to drive out the evil demons by exorcism, prayer, and sprinkling with holy water. If these methods failed, violence was applied on the

principle that if patients were thoroughly beaten, the devil within would become uncomfortable and flee.

With the rise of medicine, the religious interpretation of mental disease gradually declined, and the care of patients was taken over by physicians. However, in modified form, the close ties between religion and the abnormal still persist. In European countries, religious groups operate a large number of mental hospitals and schools for mental defectives. In this country it is an accepted function of clergymen to minister to the psychological as well as the spiritual needs of their congregations (7). When faced with severe personal difficulties, the more pious frequently turn to religion and prayer for guidance and inner peace. To aid these individuals, many clergymen have undertaken special training in abnormal psychology and, in several instances, have established mental hygiene clinics, usually under medical supervision, in their churches.

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CHAPTER II

MOTIVATION AND ADJUSTMENT

A knowledge of human motives and the factors facilitating or obstructing their full expression is basic to an understanding of the psychology of adjustment. Whether an individual is adjusted or maladjusted depends in a large measure on (a) the extent to which a state of harmony prevails among his manifold drives, motives, and ideals; (b) the extent to which his wishes and aspirations are adequately attained; and (c) the extent to which his desires and actions are in conformity with the demands and standards of his social group. Inner strivings and motives that permit a person to live at peace with himself and his social group make for adjustment; those that create personal discord and social conflict favor maladjustment.

PHYSIOLOGICAL DRIVES

Physiological drives are persistent internal stimuli, generally of a discomforting nature, that direct the individual's attention and energies toward the attainment of certain basic biological goals. The three main functions of drives are to satisfy the organic needs of the body, to protect the organism against physical injury, and to stimulate activities favorable to reproduction and infant care.

Organic Needs.—To survive and function properly, the human organism requires food, water, oxygen, rest or sleep, elimination of waste products, and an even internal body temperature. Each of these needs is served by a specific physiological drive. As long as the requirements of the body are adequately satisfied, the internal environment is in a state of quiescence, or equilibrium. In thermostatic fashion, drives set off corrective or compensatory activities whenever the internal physiochemical balance is threatened by an unfavorable temperature, a lack of food, water, and oxygen, or an excess of waste products and

toxins. The impending disturbance is generally signaled by some persistent tissue irritation that releases some of the energy stored in the body and creates sufficient tension to impel the individual to engage in some activity that will avert the threatened disequilibrium, restore internal harmony, and eliminate the persistent tissue stimuli (11).

In the case of hunger, a threatened drop in concentration of blood sugar or other nutrient material gives rise to vigorous contraction of the stomach walls. This persistent tissue annoyance leads to sustained stimulation of efferent nerves, which in turn release energy produced and stored in the body tissues. The resulting state of tension and unrest spurs the individual to greater activity until food is obtained. With intake of food, the stomach contractions subside, the threatened chemical shortage is averted, and internal biochemical equilibrium, or *homeostasis*, is restored.

When the water content of the body reaches a low point, the salivary glands cease secretion. Deprived of saliva, the mouth and throat become dry and parched and the individual complains of thirst. Drinking raises the water level of the body, permits a resumption of salivary activity, and thus terminates thirst.

A diminished supply of air in the lungs produces a pressure sensation of a painful nature in the chest and throat, experienced subjectively as a feeling of suffocation. This disagreeable sensation elicits vigorous breathing movements that replenish the air supply of the body.

High and low external temperatures jeopardize the maintenance of an optimal internal temperature and produce alterations in the dilation of blood vessels and in the activity of the sweat glands. These changes are accompanied by uncomfortable sensations of cold or warmth. The spontaneous corrective measures for cold are decreased heat loss through the skin and increased heat production through stimulated appetite and increased activity. A threatened rise of internal temperature is prevented by increased perspiration, diminished activity, and loss of appetite.

Like other physiological drives, sleep serves an essential or-

ganic need, namely, it provides a favorable condition for mental and physical recuperation. Sleep is a period of rest characterized by marked relaxation of the postural musculature and by sharply decreased sensitivity to sensory stimuli. In infancy, sleep is most likely induced by fatigue toxins, but in later life the sleep cycle is regulated mainly by acquired habit patterns. With the approach of our customary hour for retiring, we begin to feel sleepy regardless of whether we have had a busy or a restful day.

Since sleep is an essential organic need, complete deprivation of sleep for even a few days would result in death due to exhaustion. However, it is extremely difficult to keep an individual continuously awake for a long period. After three days of continued wakefulness, the urge to sleep becomes so insistent and pervasive that it overtakes the individual. Experimental studies indicate that when human subjects are deprived of sleep for 60 or more hours, except for brief unnoticed naps, they usually show signs of irritability, emotional instability, hallucinations, confusion, headaches, and ocular discomfort. In a study reported by Katz and Landis (6), one subject, who was described as somewhat eccentric, maintained a 10-day vigil which was periodically broken by short periods of inadvertent sleep totaling five and a quarter hours. The longest period of continuous wakefulness was 62 hours. After the fifth day, the subject began to exhibit abnormal reactions, including irritability, hallucinations, disturbances in thinking, and disorientation. As the vigil continued, he gradually developed delusions of a persecutory nature. By the tenth day, his behavior, as a result of these delusions, became so unmanageable that it was necessary to terminate the experiment.

Protection against Injury.—This function is largely relegated to the sense organs and the emotions. Noxious stimuli in the form of strong or painful stimulation of the cutaneous, auditory, olfactory, and visual organs evoke diffuse emotional disturbances of fear, anger, and annoyance. These disturbances influence the individual to withdraw from, or eliminate, disturbing sensory stimuli. Since freedom of action is essential for the avoidance of harmful stimuli, forceful restraint of bodily movements

evokes rage responses characterized by vigorous struggling movements. On the positive side, favorable or protective stimuli, such as stroking of the skin, produce affective and motor reactions conducive to the continuation of the stimulation.

Reproduction and Infant Care.—Propagation and infant care are entrusted to the sex and maternal drives. Hormonal secretions of the anterior pituitary and gonadal glands, intensified by kinesthetic sensations originating from the sex organs, create a state of erotic excitement that orients the individual toward participation in sexual activity. The physiological basis for maternal behavior is traceable to a hormone of the anterior pituitary gland. Pressure sensations arising from the congested mamillary glands also play a contributory role.

Exploratory Drive.—Unless an animal engages in a certain amount of exploratory activity, he will be unable to obtain food, water, sex mates, and refuge from harmful stimuli. This is also true of the human organism. Healthy babies actively explore their environment and, if unrestrained, will wander off. In later years this innate biological drive finds expression in the perpetual questions of children and the general curiosity of adults.

Voluntary Control.—Under usual circumstances, physiological drives have a right of way because they are painful to ignore and pleasant to yield to. Eating, for example, eliminates the disagreeable pangs of hunger and is at the same time a pleasurable experience in itself. Man, however, does not always react to his internal urges in the expected fashion. Their expression is to a great extent subject to voluntary control and modification through learning. Under certain circumstances he may choose to ignore hunger, inhibit sexual craving, or expose himself to physical injury and even death. Unhappily married women or unwed mothers often suppress their maternal feelings and may actively reject their children.

PSYCHOLOGICAL MOTIVES

In civilized countries, food, shelter, and protection against physical injury are, in normal times, readily obtained, so that

physiological drives, per se, are rarely the direct causes of emotional disturbances and conflicts. Of far greater direct significance for happiness, mental health, and adjustment are man's psychological drives, which, for purposes of distinction, may be termed *motives*, or *wishes*. These psychological needs may be viewed as elaborations of the more basic physiological drives but, as noted by Allport (2, p. 194), they are "self-sustaining *contemporary* systems growing out of antecedent systems but functionally independent of them."

Basic Motives.—Some disagreement exists among psychologists as to the classification of psychological motives. The following are some of the more widely accepted. Almost everyone possesses these desires or motives to some degree, but they are by no means innate and universal, or equally intense in all persons.

Security.—The desire for security is essentially an anticipation of future organic needs. Economic and political security assures shelter, comfort, and nutrition at some distant date. Subservient to this need are the attitudes of acquisition, conservatism, order, retention, and construction reported by Murray (9). Submission and deference may also be included in this category, since a willingness to yield and to follow a strong leader often furthers one's own security.

Mastery.—The striving for some degree of achievement, recognition, superiority, or popularity has been interpreted both as a further guarantee of security and as an expression of the rage reaction in that the attainment of mastery implies the overcoming and removal of thwarting obstacles. This motive figures in most classifications under such names as "desire for preeminence" or "will to power."

Self-esteem.—In Occidental as well as in Oriental countries, the preservation of self-respect, "saving of face," and the defense of pride and honor are of great importance in deciding choice of action. Murray refers to a need for inviolacy and includes under this heading avoidance of failure, defense against belittlement, and overcoming of defeat by repeated effort and retaliation. McDougall's sentiment of self-regard and Freud's

concept of narcissism are also nearly synonymous with the self-esteem motive.

Social Motive.—Man is gregarious by nature. Most individuals enjoy associating with other people and are dejected when involuntarily deprived of human companionship. It is fear of ostracism, with its attending loneliness and loss of community advantages, that influences men and women to conform to traditions and strive for social acceptance. The two-way strength of this motive is reflected in the popularity of clubs and fraternal organizations and in the use of social isolation as a method of punishing difficult convicts. The bombing of English cities during the Second World War afforded another striking illustration. Forced to decide between the dangers of city dwelling and the safety of the lonely countryside, many urbanites, after a brief trial of the latter, returned to their blitzed cities, stating that they would rather be bombed than bored.

Response from Others.—Most individuals are not content with mere membership in a social group. They want to be respected as well as accepted. They crave recognition and favorable responses from their associates. There is a great need for intimate friendship that finds expression in the joy of sharing experiences and confidences. Out of the wish for response from others grow kindness and altruism. This desire to give and receive attention and affection appears in accentuated form within the family group. Parents strive, sometimes at great personal sacrifice, to win the affection of their children, and children are most unhappy when denied the love of their parents.

Psychosexual Motive.—The need for affectionate responses from others, when intensified and colored by the sex drive, finds special expression in the exchange of love between sweethearts and marital partners. Each gives generously of himself to the other and, in so doing, becomes important to the welfare and happiness of the other. Narrow personal identity and outlook is expanded to include two lives, to the enrichment and mutual advantage of each.

Habits as Motives.—Our habits frequently become our masters. Activities that initially serve as means to an end eventually become objects of interest in their own right (10). **Habits**

grow on us, and we obtain pleasure in exercising them even when they no longer serve their original purpose. A person may take up law as a means of earning a livelihood, but even after he acquires a fortune he may find it impossible to give up his practice. On a holiday, the postman takes a long walk, and the sailor goes rowing in the park lagoon. After many active years in service, most men would rather continue with their work at half pay than retire on pensions. If forced to surrender their work habits, they often become apathetic and unhappy. The driving force of habits is also seen in our desire to repeat past experiences, to avoid change, and to remain in the realm of the familiar. If long continued, the most unpleasant surroundings and most strenuous occupations eventually become desirable. Men grown old in prisons or mental hospitals often ask to be readmitted when set free.

New Experience.—As an antidote to too much attachment to old habits and overconcern with security, most individuals desire adventure and excitement. This wish for new experiences is a stimulus to research and invention, but it is also a motivating factor in delinquency, immorality, drug addiction, and other forms of undesirable behavior. Our dislike for monotonous routine and interest in traveling and making new friends are some milder expressions of this tendency.

Aggressiveness.—Whether man is by nature aggressive and destructive is debatable. Psychoanalysts maintain that each individual, as part of his biological inheritance, possesses destructive death urges as well as constructive life urges. Pitted against the will to live and love is the will to die and destroy. The pleasure people obtain in watching fires, accidents, executions, bullfights, and horror movies, the widespread interest in murder stories, and the cruelty of some children toward playmates and animals give support to this doctrine.

In most individuals there exists a favorable balance between the life and death urges, so that kindness triumphs over cruelty, constructiveness over destructiveness, and compassion over hate. In a few individuals the reverse is true. Aggression may then be directed against others in the form of cruelty, assaultiveness, property destruction, or murder; or it may be turned upon the

self, leading to asceticism, martyrdom, self-mutilation, or suicide (8).

Although accepting the fact that human actions are often more destructive than constructive and sometimes openly beligerent and hateful, most psychologists prefer to interpret aggressive behavior as a reaction against frustration rather than as a fundamental psychological motive (5).

Relative Importance of Motives.—There is no way of accurately measuring the relative intensity or strength of human motives. All play a part in weaving the pattern of life. Behavior is generally determined by a mixture of many motives. In attending college, for example, the student is responding to several motives. A college education enhances self-esteem, makes for greater economic security, favors mastery, satisfies the thirst for new experiences, and usually provides added opportunities for romance. It is also a continuation of the habit of going to school. On the other hand, a dominant motive is often discernible in the lives of specific individuals. Some are primarily interested in security; others sacrifice all for social recognition, personal pride, love, or the thrill of a new experience. A craving for affection may influence a person to renounce security and social approval, and an insatiable thirst for power may result in the dwarfing of all other desires.

Which motives predominate in a given individual will depend largely upon his social environment and personal experiences. Studies by Benedict (4), Mead (7), and other anthropologists have shown that various cultures encourage the development of some motives and discourage the expression of others. Intense striving for power may be the ideal in one tribe, but it may be frowned upon in some neighboring community. In other cultures, cooperation may be the central theme molding behavior.

In modern society, the effect of culture in shaping motives is also apparent. The people of the United States are, in general, more concerned with competition than the people of South America; face saving appears to be more important in the Orient than in the Occident. Within a culture, individual differences in motives among the normal population are largely the prod-

uct of pleasure-pain conditionings. Our society favors the development of the social drive, but persons ridiculed by associates learn to avoid and even dislike social contacts. Normal psychosexual feelings may become distorted as a consequence of an unfortunate love affair. Repeated failures may lead to a surrender of the mastery motive; and poverty during childhood may make striving for wealth the basic life goal.

Sentiments and Ideals.—Emotional attitudes toward certain objects or classes of objects, known as “sentiments” and “ideals,” are also important sources of human motivation. These are largely built up through experience and training. There naturally are wide individual differences with respect to the nature and intensity of these more complex sources of motivation. Some examples are loyalty to friends, patriotism, sympathy, reverence, sense of duty, and honesty. Although somewhat more abstract and more subject to cultural influences, these sentiments are no less effective than motives. Man has always fought and sacrificed for his ideals. In times of war, soldiers give up their lives for love of country; and in times of peace many willingly shoulder unnecessary responsibilities because of loyalty to friends and relatives and sympathy for the less fortunate.

THE ADJUSTMENT PROCESS

The principal elements of the adjustment process are indicated in Fig. 3. Some insistent motive disturbs mental tranquillity and sets in motion activities designed to eliminate intervening obstacles and thus permit the attainment of the goal essential to the restoration of psychological equilibrium. Thus, a desire for financial security, expressed by a goal of \$5,000 a year, will drive the individual to engage in various activities that will enable him to overcome the obstacles in his path. Some possible actions might be attending graduate school to train for a profession, saving and investing his income, working hard for advancement, or marrying a person of wealth. When the goal is attained, there is a release of tension and a decrease in goal-directed activities. If motives were simple and goals were easily attained, there would be little cause for maladjust-

ment. Unfortunately, motives are complex and often mutually antagonistic. In addition, difficult obstacles of a personal or external nature frequently thwart the attainment of aspirations and desires.

Conflicting Motives.—It is often difficult to decide which of two or more opposed motives to satisfy. Much as one would like security, there are the attractions of new experiences. An early marriage will satisfy psychosexual urges but, by interfering with the completion of a college education, it may jeop-

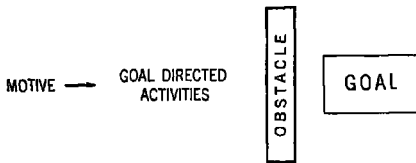


FIG. 3.—The principal elements of the adjustment process. Oriented toward a goal by some motive or desire, the individual strives to overcome intervening obstacles by increased effort and varied approaches. If these goal-directed activities fail, he may attempt to satisfy his motive by changing or lowering his goal to one more attainable.

ardize future achievement. Especially in time of war, there may be a clash between physiological drives and psychological motives, for example hunger versus honor and avoidance of death versus heroism.

Antagonistic desires of this nature destroy mental equilibrium and give rise to *conflicts*. The individual vacillates from one course of action to another and back again without being able to arrive at a decision. During the process, he becomes progressively more tense and confused. The deadlock is eventually resolved either on the basis of logical reasoning or by an impulsive decision. In most instances this settles the matter. The individual concentrates on the advantages to be derived from the selected goal and ignores the rejected one. However, some individuals are incapable of solving their conflicts in this fashion. They may attempt to satisfy both desires with futile half-way measures or they may remain in a state of chronic indecision. Both of these reactions are conducive to the development of abnormality.

SOURCES OF FRUSTRATION

Competition.—Most individuals have somewhat similar desires, but they are not equally equipped to satisfy them. Some, by virtue of a superior heredity or more favorable family background, possess an insurmountable advantage over others with respect to intelligence, physical attractiveness, social charm, and emotional stability. In the competitive struggle for wealth, desirable marital partners, social recognition, professional success, new experiences, and other values that make for happiness, they encounter fewer difficulties than the less well endowed.

Too High Goals.—Since the goal, to a large extent, determines the severity of obstacles, too high ambitions are important sources of frustration. Individuals who aspire to scholastic, professional, or social achievements beyond their abilities court psychological disaster. Parents and teachers are the principal offenders in encouraging children to aim too high. At all educational levels are found unhappy students who would be well adjusted if they were satisfied with doing passing work without pathetically striving to do A work with C brains. Almost every American boy is encouraged to believe that he can, by hard work and clean living, become President of the United States. Actually, the chance of attaining this goal is about .1 in 25,000,000. The expression "there is always plenty of room at the top" is an outright misstatement of fact. By very definition, only a few can ever become executives, famous persons, or leaders. The great majority of the population must be content with moderate success.

Social Obstacles.—The restrictions placed on behavior by the rules of society constitute another important source of frustration. In satisfying our manifold desires, our actions must be in conformity with the accepted moral and social code of our culture. One cannot, with impunity, seek a short cut to economic security by theft or gain new experiences through marital infidelity or drug addiction. Members of minority groups and persons born on the "wrong side of the tracks" often find it diffi-

cult to attain their life goals because of discriminatory social and economic barriers.

Other Sources of Frustration.—Human wants are sometimes thwarted by wars, floods, economic depressions, political upheavals, and other events that upset the best-laid plans. In many war-torn countries, the scarcity of men constitutes an important obstacle to marriage. As yet, this is not a serious problem in the United States, where the sex ratio is only slightly in favor of females.

REACTIONS TO FRUSTRATION

Frustrations create uncomfortable emotional tensions that operate as insistent drives influencing the individual to engage in various tension-reducing activities. The variety of reactions to frustrations is practically unlimited. The reactions may range from the constructive direct approaches of normal individuals to the mental symptoms of psychotic patients.

Direct Approaches.—The two principal direct methods of overcoming obstacles are through increased effort and variation in mode of attack. If these approaches fail, the third direct course of action consists in changing the goal to one that is more attainable. A premedical student doing unsatisfactory work in his courses may first react by spending more time and effort on his studies. If this does not produce satisfactory results, he may try to improve his grades by changing his study habits, employing a tutor, selecting easier courses, or becoming an "apple polisher." Should these varied approaches prove unsuccessful, he may give up his medical goal and transfer to some other course more in keeping with his abilities.

Feelings of Inferiority.—When increased effort and variation in attack fail and substitute goals are unavailable or unacceptable, individuals often react by developing feelings of helplessness and inadequacy. This emotionally distressing state of mind, popularly known as the *inferiority complex*, is especially prevalent among individuals who attribute their failure to attain life objectives to personal inadequacies or defects. An inferiority complex is a form of self-criticism usually involving

fear of social disapproval. As might be expected, persons burdened with ideas of inadequacy show considerable variation in conduct and mental reactions. Some of their more common characteristics are extreme sensitiveness to criticism, suspiciousness, envy, expansive response to flattery, playing to the grandstand, fear of competition, unsportsmanlike reaction to failure, tendency to disparage others, accentuated self-consciousness, proneness to worry, and excessive self-analysis (1, 3).

Feelings of inferiority bear no direct relationship to actual ability. As a matter of fact, inferiority complexes are much more common among persons of high than of low ability. For example, more college students than morons are troubled by thoughts of intellectual inferiority. In general, the severity of inferiority feelings experienced by an individual is determined by the amount of discrepancy between his ambitions or goals and his actual achievement. Persons with simple goals that are easily satisfied are rarely troubled by inferiority attitudes. High ideals that are difficult to attain are prerequisites for an inferiority complex, and the severity of inferiority feelings is roughly equal to the difference between ambition and success. The student who aspires to be the top-ranking member of his class and earns second place may suffer miserably from pangs of inferiority; whereas the student whose goal is limited to doing passing work may be immensely pleased if he ranks in the middle of his class.

In a study of college students, Allport (2) noted that more than 90 per cent had experienced feelings of inadequacy. Approximately three out of five students of each sex admitted that at some time in their lives they had felt physically, socially, and intellectually inferior. Feelings of moral inferiority were reported by more than one-third of men and one-fourth of women students.

Feelings of inadequacy may be cured in one of two ways. One method is to lower the goal to a level within easy range of achievement. This technique is common among college students who in their freshman year try for a straight A record but who are well satisfied with a B average by the time they are sophomores. A second alternative consists in attaining the original

goal by great intensification of effort or removal of personal handicaps. Two outstanding examples are provided by the lives of Helen Keller and Theodore Roosevelt. Through diligent and persistent efforts, Helen Keller overcame the double handicap of blindness and deafness to become a successful writer and speaker. As a boy, Theodore Roosevelt was extremely sensitive of his physical frailness. He successfully compensated for his physical inferiority by becoming a "Rough Rider," big-game hunter, and an ardent exponent of vigorous and dangerous living.

As these two illustrations imply, inferiority feelings are not without value in that they frequently drive their possessors to great achievement. Many outstanding men and women owe their success to the fact that they were tormented by attitudes of financial or social inferiority in their youth.

Aggressive Behavior.—Instead of adjusting passively to obstacles by developing defeatist attitudes, many individuals vigorously attack or develop hostile attitudes toward the source of their frustration. We usually dislike and are vindictive toward people who humiliate us or prevent us from attaining our goals. Aggressive behavior is most common when frustration is caused by some external obstacle, but failure due to personal faults and errors may also evoke this reaction. The target of attack is usually some other person or object, and the intensity of the attack varies with the amount of frustration.

When parents interfere with the wishes of their children, the latter frequently turn upon the parents and either express their hatred outright or indirectly punish them by engaging in some destructive, defiant, or annoying behavior. Discharged employees have been known to assault their foremen or damage company property. It is not uncommon for convicted criminals to swear that they will get even with the judge or prosecuting attorney who deprives them of their freedom. Radical political movements that advocate the overthrow of established government through violence have always drawn their chief support from the disgruntled and frustrated members of society.

However, it is not uncommon for thwarted persons to direct their aggression upon themselves. Many individuals "kick

themselves" when hopes are not realized. Mental depression, sulkiness, feelings of guilt, and suicide are essentially methods of self-punishment. Indirectly, of course, these reactions may also punish other persons in that such behavior is discomforting and annoying to associates. The suicide who leaves notes blaming specific persons for his act frequently hurts the designated persons much more effectively than he might have by direct attack (8).

Mental Mechanisms.—Good solutions to conflicts, frustrations, and inferiority attitudes are not always available. Physical handicap or the necessity of taking care of their parents may prevent many persons from attaining their goals of marriage, children, and a home of their own. Individuals possessing mediocre ability and high aspirations may strive in vain for success as scholars, business executives, or artists. Sound plans for security or new experiences may be thwarted by disabling accidents, bank failures, wars, and other catastrophes.

Under such circumstances, the individual has the alternative of remaining chronically tense, maladjusted, and crushed with feelings of inadequacy; or he may obtain partial relief through unconscious recourse to *mental mechanisms* that have some protective, alleviating, or escape value. Some common mechanisms are phantasy, compensation, identification, projection, rationalization, and sublimation. These "psychological detours," which will be discussed in the following chapter, are frequently used to great advantage by normal individuals without any attendant ill effects. When carried to extremes, however, they may become symptomatic of neurotic or psychotic behavior.

Mental Symptoms.—The symptoms of the neurotic and the psychotic usually serve the same general purposes as those served by the mental mechanisms of normal people; that is, they adjust the mentally ill to their inner conflicts and to the demands of the external environment. Through loss of memory and varied psychogenic ailments, neurotics escape from distressing life situations. Psychotics indirectly satisfy frustrated ambitions by developing delusions of grandeur, and they protect themselves against harsh realities by distorting facts and withdrawing into satisfying private worlds. An important difference between

mental mechanisms and mental symptoms is that the latter are more drastic last-stand measures that provide partial adjustment at best, at the high cost of gross impairment of function and social maladjustment.

Quality of Adjustment.—Good solutions, in addition to relieving the tension created by specific thwarting situations, should result in desirable personal and social adjustment. A person who embezzles a large sum of money may remove his immediate fear of financial insecurity, but he will then be disturbed by his conscience and by fear of apprehension. A secretary may obtain considerable satisfaction from candidly telling her exasperating employer exactly what she thinks of him, but the subsequent discharge would not improve her general adjustment. The student who reacts to his lack of popularity by aggressive and insolent behavior, like the child who seeks attention by engaging in minor delinquencies, obtains some relief; but solutions of this nature are not conducive to complete mental tranquillity. In brief, whether the selected tension-reducing activities result in favorable or unfavorable adjustment depends on the extent to which the individual regains his mental equilibrium without unduly slighting other motives, lowering his personal efficiency and standards, violating social customs, or interfering with the welfare of others (3).

An example of good adjustment to a difficult situation follows. Some poor solutions might have been extramarital affairs, divorce, persuasive weeping, perpetual quarrels, or running back to mother.

Two years after graduating from college, Jane married a young physician. Her husband started his practice in a small town, and for several years Jane was extremely busy running a home and leading an active social life. After accumulating some money, her husband decided to return to school and specialize in surgery. He obtained an internship in a large hospital and spent almost all his time there. He would come home only two evenings a week and on these occasions he would study or rest.

To economize, they had rented a small apartment, and Jane found that time passed very slowly. In addition, she began to feel that she was unimportant to the welfare of anyone. Her husband had his meals

at the hospital, and he seemed to do his work quite well without her. Jane solved the situation by taking a course in nursing. This kept her quite busy so that she no longer resented her husband's habit of studying all the time. She also felt more important in that she was preparing herself to be more helpful to him. In the meantime, he had to consult her about their mutual plans.

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CHAPTER III

MENTAL MECHANISMS AND SYMPTOMS

When psychological equilibrium is threatened by severe emotional traumata, frustrations, or conflicts, the mind resorts to a variety of protective subterfuges and detours called *mental mechanisms* or *dynamisms*. Since mental mechanisms usually are forms of self-deception, the individual is not fully aware of their presence or purpose and resents having his attention called to them.

These balancing devices are desirable in moderation and are frequently utilized by normal individuals. They soften failure, preserve inner harmony, and permit some degree of adaptation to distressing experiences. In exaggerated form they are indicative of abnormality in that undue reliance on defense-escape mechanisms interferes with real achievement, fosters social maladjustment, and makes for personal unhappiness. As long as they are utilized for what they are—shock absorbers, stratagems, retreats, and camouflages—they are healthy adjustive mechanisms. They are abnormal symptoms when they become ends in themselves or are misinterpreted and confused with reality.

✓ **Phantasy.**—Also known as *daydreaming* or *reverie*, phantasy is one of the most common mechanisms. Almost all individuals daydream at some time, and two out of three college students admit daydreaming frequently. Although reverie occurs at all ages, there is some evidence that adolescence is the period of highest frequency, followed by childhood, old age, and adulthood. Daydreams reflect our wishes and frustrations, hopes and disappointments. By a simple flight into phantasy we escape the hardships and unpleasant aspects of real life, compensate for some inadequacy, or gratify in our imagination some frustrated or distant ambition. The dreamer is usually the central character. The physically handicapped person pictures him-

self a superathlete, the lonely child creates make-believe playmates, and the unpopular girl is surrounded with admirers. The adolescent dreams of adventures, romance, and the success of tomorrow; and the old man relives the happy and energetic days of his youth. In our daydreams all obstacles disappear, and those who offend us are punished.

As long as these excursions in the land of make-believe do not interfere with adequate functioning, they are acceptable modes of adjustment. They may even be of some value in that they provide "mental vacations" that make it possible to return to our difficulties with renewed energy. Also, the heroic content of dreams may act as a motive, spurring the person on to greater achievement. The danger lies in the fact that the dreamer may come to prefer the easy and empty triumphs of reverie to the more moderate and difficult achievements of real life.

Compensation.—To offset or make up for some feeling of inadequacy, whether real or imagined, many individuals engage in various forms of compensatory activity. Compensation may be direct or indirect, desirable or undesirable. Direct compensation consists in intensive striving for success in the very field of inferiority. A frail youngster, through careful diet and rigorous exercises, may develop a robust physique; and a mediocre student, by long hours of study, may earn excellent grades. When an individual attempts to counteract feelings of inferiority in one field by success in some other field of endeavor, he is engaging in indirect compensation. Average students who concentrate on becoming outstanding athletes or social successes, and unattractive individuals who strive to develop their intellect or personality, are examples of indirect compensation.

Whether compensatory activities are desirable or not depends on how satisfying they are to the individual and on the effect they have on his social adjustment. Seeking a complementary success in some inferior enterprise to offset failure in an important field is a mild form of undesirable compensation. To compensate for failure in college or in one's chosen field of work by becoming an excellent ping-pong player, fisherman, or amateur photographer is a soothing but poor substitute for success in school or business.

More serious examples of undesirable compensation are individuals who *overcompensate* for feelings of inferiority. They may develop a *superiority complex*, become rude and aggressive, or attempt to gain attention they cannot obtain in approved fashion—by wearing bizarre clothing, affecting peculiar mannerisms, or adopting radical social and political ideals. Much of the disorderly conduct of children is designed to compensate for lack of recognition and attention. Talking out of turn, acting the class clown, disobeying orders, and engaging in minor delinquencies often serve as compensatory attention-getting mechanisms.

Margaret was a somewhat stocky and awkward student of mediocre mental ability. In her junior year in college, she decided that she should take a greater interest in social affairs, and for a time she made a serious effort to improve her appearance and mix with classmates of the opposite sex. Her efforts, however, met with meager success, so she gave up her social interests and concentrated on her studies. Possessing only average intelligence, she was unable to become an outstanding student. This double failure led to arrogant and aggressive behavior. She forced her attention upon others and frequently engaged in heated arguments about trivial matters with the girls in her dormitory. Her favorite trick was to look up some topic in the encyclopedia and then dominate the table conversation with a recital of her superior knowledge.

Identification.—In some measure, it is possible to acquire vicariously the many personal qualities one desires and to satisfy varied and contradictory ambitions by associating and identifying oneself with appropriate individuals and objects. Children identify themselves with their parents; college students with their team, fraternities, and schools; and adults with their clubs, business organizations, exclusive neighborhoods, and sleek cars. In so doing, they transfer to their own ego the desirable attributes and prestige values inherent in the person or object selected. Parents frequently identify themselves with their children and, with some justification, regard the achievements and successes of sons and daughters as personal triumphs.

Hero worship is an obvious form of identification. One strives to become like the hero by imitating his dress, mannerisms, ges-

tures, and views. Books and moving pictures provide made-to-order vehicles for identification. In reading a book or seeing a film, we tend to identify ourselves with one of the characters and live the part. For the moment we *are* the soldier of fortune, the glamorous beauty, the world-renowned scientist, the clever detective, the Cinderella who makes good. Depending on the role and the extent to which we have felt ourselves in the part, we emerge from the story or theatre elated, sad, or exhausted. At times the identification is so strong that the person continues to play the role for several hours or days later.

Most individuals identify themselves with the hero or winner and thus indirectly gratify their wish for superiority. A small minority, however, consistently take the part of the villain or underdog. At prize fights, for example, there are always a few who wince with every blow and are figuratively beaten by the end of the fight. Innocent men and women who confess to sensational crimes headlined in newspapers are more extreme examples. This negative type of identification implies a need for punishment arising from strong guilt feelings or suppressed asocial inclinations that are associated with secret past misdeeds. With mental patients, identification passes into impersonation. Some psychotic individuals firmly believe that they are Rockefeller, Eisenhower, or some other famous person.

Mrs. S, a housewife of limited means but high social ambitions, daily read each item on the society page of her local newspaper. She knew every individual of note in her city's four hundred, their children, hobbies, and family background. Her conversation was sprinkled with their names and doings. She gave the impression that she was on intimate terms with them. Every important wedding or funeral found her present, and to judge from her reactions on these occasions, the casual observer would think that she was attending her daughter's wedding or her father's funeral.

Projection.—Attributing to and observing in others one's own impulses and traits is called *projection*. Personal faults and shortcomings especially are projected on others. The common tendency of blaming others for our mistakes is a simple illustration. This is an ancient device. In the garden of Eden, Adam

blamed Eve for his downfall and Eve blamed the snake. In indirect fashion, this externalizing of personal defects serves to protect the ego against self-criticism. Offense is the best defense. In criticizing others for their selfishness, stupidity, and obstinacy, we defend ourselves against justified self-accusations of a similar nature.

When a student constantly complains about the loose morals and lack of religious ideals of his associates, it may be safely assumed that he has some personal misgivings on these topics. By criticizing in others faults he himself possesses, he evades the painful recognition of these personal failings. In addition, the vehemence with which he attacks their presence in others affords a circumspect method of self-punishment. Obviously this self-deception must occur below the level of consciousness to be effective. Individuals who are aware of their own objectionable traits are less prone to project them on others (9).

Intrafamilial conflicts are often founded on projection. The adulterous husband accuses his wife of similar actions, and the tempted wife is ever on the alert to note similar inclinations on the part of the husband. It is not uncommon for unhappy parents to blame their children for their unhappiness. This is especially true of unwed mothers who attribute their disgrace and social ostracism to their illegitimate offspring. But for them, they would be respected members of society. Parents also project their thwarted ambitions on their children. Fathers who in their day were poor scholars or athletes expect their sons to achieve distinction in these respective fields. Mothers who have made poor marriages sometimes utilize their daughters to fulfill their own ambitions for a successful marriage.

Bagby (2) cites the case of a mother who made an imprudent marriage and soon was distressed and humiliated by her lack of social position. When her daughter was born, the mother developed elaborate phantasies. Her little girl was to grow up to be an utterly charming person and make a brilliant marriage. To her great disappointment, the girl was neither pretty nor clever. This blasting of her hopes infuriated the mother, and she persecuted the child by punishing her without justification and calling her an ugly duckling. As the girl approached ado-

lescence, her appearance improved, and the mother's exalted matrimonial plans were promptly revived. When the first eligible young man called on the girl, the mother ushered him in with considerable ceremony and ostensibly departed, but actually she concealed herself behind the curtains at the door. As soon as the young man left, she severely criticized her daughter's technique. Several young men called after this but the girl, knowing that her mother was behind the curtain, acted accordingly and the young men went away never to return. The final outcome was that the girl lost what little confidence she had and developed an unfavorable attitude toward marriage.

Rationalization.—The true reasons for some of our actions are neither flattering to our sense of self-importance nor socially commendable. To preserve self-respect and the good opinion of associates, most persons, without conscious intent, substitute "good" reasons for real reasons so that their actions may appear justified, logical, and socially laudable. This window dressing of motives and actions is called *rationalization* (5).

It is well to note that the explanations offered for our actions are formulated *after* the action has occurred, and the intensity with which we defend our behavior is in inverse proportion to its soundness. It is primarily our errors that we elaborately defend and explain. The young man who has engaged in some peccadillo justifies his action on the grounds that it was part of his education. Humiliated by the better sales record of a high school student, the college graduate finds consolation in the statement, "You have to be as dumb as your customers to be a good salesclerk." Rather than admit that their poor grades are due to limited intelligence, students attribute their low marks to lack of study, sickness, or lack of interest in grades. Such popular sayings as "slow but sure" and "beautiful but dumb" are rationalizations utilized by slow learners and unattractive girls. Actually, rapid learners remember better than slow learners, and beautiful girls, on the average, are brighter than unattractive girls.

The use of rationalization is not restricted to individuals. Nations engaging in aggressive or belligerent actions for economic and political exploitation often conceal their actually base mo-

tives behind the shining armor of "a new order of peace and prosperity," "the white man's burden," and "a holy crusade" (10).

The adjustive value of rationalization is well illustrated by a consideration of two special types which have been facetiously labeled the "sour-grapes" and the "sweet-lemon" attitudes. The sour-grapes reaction is based on the fable of the fox and the grapes. Finding that he could not reach the luscious grapes, the fox consoled himself with the thought that they were sour anyway. When we do not obtain what we desire, we may avoid the bitterness of disappointment by persuading ourselves that the sought object is not worth having. The young man who fails to secure a position saves face and self-respect by proclaiming that he didn't really want the job. The hours were too long, the salary too small, the work too routine, and chances of promotion slim. The high school student whose plans for attending college are frustrated may cushion his disappointment by stating that college is a waste of time and money. The jilted suitor, on reconsidering, may see many faults in his former loved one; and the girl who fails to receive a sorority bid thinks up many reasons for not joining one.

The central theme of the sweet-lemon, or "Pollyanna," attitude is that this is the best of all possible worlds and whatever happens is all for the best. The loss of a fortune is a severe blow, but the blow is softened by the rationalization that now the individual can enjoy the simpler and more important things in life which he formerly overlooked. A broken leg is a blessing in disguise because it affords the victim an opportunity to catch up with his reading. An occasional defeat or disappointment is interpreted as good for it increases one's appreciation of later success.

Through the magic of rationalization, a personal defect may become an asset. A student with large mulelike ears was at first sensitive about them. Finally he hit upon the pleasing thought that the size and shape of his ears permitted him to detect small tone differences, an asset in music. Partly on this account, he undertook the study of music and eventually became a successful teacher of singing (2).

Withdrawal.—Fear of failure or criticism, based on unfortunate earlier experiences, is a common cause for timidity, seclusiveness, and other forms of retreat. In extreme instances, this leads to a condition Burnham (3) has called *pseudo feeble-mindedness*. Although observed especially in children, it also occurs in adults. Following a policy of "nothing ventured, nothing failed or punished for," the pseudo feeble-minded take no interest in their work, and their characteristic responses are "I don't know," "That's too hard," or "I can't." Consequently, they acquire a reputation for being stupid when actually they may be of average or superior intelligence. With proper encouragement and training, they frequently show improvement.

Selective Forgetting.—A simple escape from distressing situations is to forget them. Most individuals make extensive use of this convenient mechanism. Experimental studies have repeatedly shown that unpleasant experiences are more readily forgotten than pleasant ones. Appointments that slip our mind are usually appointments we do not wish to keep.

The deliberate and conscious ejection of discomforting impulses and memories from the field of attention is called *suppression*. The involuntary or spontaneous exclusion from conscious awareness of thoughts and impulses that are disturbing to the individual because of their painful or immoral nature is termed *repression*. An illustration may clarify the difference between the two terms. Let us assume that through negligence a student has been responsible for a serious accident. If he is periodically disturbed by the memory of the accident and intentionally attempts to force the unpleasant memory from mind by deliberately concentrating his attention on other matters, he is engaging in suppression. In the case of repression, the memory of the accident is "lost," with the consequence that the student ceases to be consciously disturbed by the spontaneous recall of the accident and, in addition, cannot readily recall the experience even if he tries. However, repressed memories are not permanently forgotten. They are simply cast out of the conscious mind into what is figuratively referred to as the *unconscious mind*. A barrier is constructed against these repressed memories to prevent their reentry into the field of attention. However,

in subtle and disguised forms, the disowned memories occasionally manage to penetrate the field of consciousness and disturb mental equilibrium.

Selective forgetting must not be confused with ordinary forgetting. With the passing of time and the acquisition of new experiences, all memories tend to fade. Selective forgetting, as a protective device, refers to the deliberate or unconscious rejection of emotionally charged memories from the field of attention. Unlike ordinary forgetting, selective forgetting does not result in a real loss of memory. The "forgotten" material is merely pushed into the background and under certain circumstances may be clearly remembered.

Negativism.—Stubbornness and a general negative attitude are frequently retaliatory reactions against unfair or discriminatory treatment. A girl who readily admitted being a rebellious person stated, "When I was young, I was always blamed for the mischief of my five brothers and sisters. Regardless of my story, I was often punished for their wrongdoing. I soon acquired the habit of not responding to my parents' questions. Gradually I became negativistic to any authority. I resent authority in others and do not work well when subordinated. Any opinion of my parents I completely rebel against. If my mother likes a person I date, I stop dating him, and if she likes a dress, I never buy it even if I like it."

Jack, a boy of ten, showed a similar reaction. Following the divorce of his parents, he and his sister were placed in an aunt's home. The aunt liked girls but disliked boys, and she made no attempt to conceal her disregard for Jack. Soon he became so sullen and destructive that it was necessary to place him in a foster home.

Pampered, egocentric children are also prone to negativistic, uncooperative behavior. When their wishes are thwarted, they become defiant and aggressive. Disobedience and temper tantrums are common expressions. In later life, these individuals, who suffer from an intense need to be important, often acquire a reputation for being strong willed. They hold their colleagues in low esteem and are quick to ridicule. When presented with a problem and asked their opinion, they are flattered and co-

operate well, but if a decision has already been reached, they always take an opposing view and cling stubbornly to it, regardless of the absurdity of their arguments. Their creed is, "I'm against it unless I thought of it first."

Sublimation.—Because of their social implications, sexual, maternal, aggressive, and other impulses are often denied direct expression. If unreleased, the energy associated with these repressed impulses may produce tension and personal maladjustment. One solution consists in draining off the thwarted energy into socially approved channels. This detouring of energy is called *sublimation*. For example, unmarried women interested in children may give expression to their repressed maternal urges by engaging in orphanage work. Individuals with strong feelings of hostility may seek an outlet for their aggression in vigorous housecleaning, woodchopping, hunting, or digging in the garden. A cruel and destructive child may in later life transform his aggressiveness into socially desirable and useful activity by becoming a butcher.

According to psychoanalysts, frustrated sexual impulses are usually diverted into constructive artistic, literary, or scientific pursuits. Dante, the famous Italian poet, provides a classical example. One day, while walking in the streets of Florence, he saw and immediately fell in love with a young girl named Beatrice. Since she belonged to a higher social class than Dante, marriage was impossible. He never spoke to her and saw her only once for a few minutes, but this chance encounter with its frustrations served as the basis for several volumes of poetry.

Reality Evasion.—Many of the disagreeable realities of life may be indirectly evaded by refusing to accept or come in contact with them. Painful or difficult decisions are often postponed to a mythical tomorrow. Criticism is either ignored or denied. We are blind to our own defects and the failings of loved ones. The last person to appreciate the fact that he is slipping in his work is the person himself. Old people will rarely admit any decline in mental or physical ability. Dull students have little confidence in intelligence-test results. When familial attachments are strong, the death of one member of the family may not be completely acknowledged by the survivors. They

pretend that the deceased is still alive, keep his room and clothes in order, set a place for him at meals, and include him in their conversations and daily plans. A surprising number of apparently normal individuals react in this fashion.

Displacement.—When the direct expression of an aroused emotion is inhibited, the emotion may be indirectly discharged by transferring it to a neutral object or idea. This transfer of affect from its original to an unrelated setting is called *displacement*. The annoyance a man feels toward his employer may be displaced upon and “taken out” on his secretary or family. A repressed fear of suicide may be transferred to a fear of knives or water. As a consequence of this substitution, the original intolerable thought of suicide is kept from consciousness and at the same time the disguised fear is permitted expression.

Reaction Formation.—A rather unusual method of controlling undesirable or socially unacceptable urges is to deny their existence and to develop diametrically opposed traits that disguise and check the more basic motives. To protest too much, as noted by Shakespeare, is equivalent to an admission of guilt. Excessive prudishness is often a protective reaction against a strong sex drive. Individuals who have succeeded in repressing dishonest or criminal tendencies in themselves are often the most cruel and exacting enforcers of law. The relentlessness with which they prosecute criminals is roughly proportional to the intensity of their own asocial drives. Excessive solicitude for a person's health may conceal a wish for his death. Mothers who are continually worried over the health of children often express their underlying hatred by punishing them in many subtle ways. The child must always take bad-tasting medicine, must only eat certain foods, must stay indoors even on pleasant days, must not play with other children or attend a circus because he might catch some disease.

The most rabid teetotalers either are reformed drunkards or are related to alcoholics. Their militant interference with the drinking habits of strangers indicates some personal conflict on the subject. It is a well-known fact that crusaders against vice are themselves often guilty of the very actions they condemn in others. A double purpose is served by their intense interest in

vice. As self-appointed censors of public morals, it is their "duty" to read obscene literature and attend burlesque shows. Somerset Maugham in *Rain* has given an excellent example of reaction formation in his portrayal of the missionary. On the other hand, reaction formations may have social value. Excessive cruelty may be transformed to kindness, and destructive tendencies may be redirected along constructive lines.

Carry Nation, of hatchet fame, who violently attacked alcohol, nicotine, kissing, ladies' fashions, and the Masons, was not above reproach in her own personal life prior to her blossoming forth as champion of morals and virtue. As a child, she was untruthful, sly, and dishonest. She frequently lied and, on visits to her relatives, stole anything that appealed to her, including money, perfume, and laces. In addition, she was stubborn and disobedient.

When nineteen, she carried on a clandestine courtship with a young physician, Dr. Gloyd, and although her parents objected to the match, she married him. Her husband appeared at the wedding ceremony in an intoxicated state and, after their marriage, was not only a confirmed alcoholic and a smoker but a cold and neglectful lover as well. His practice dwindled to nothing, and Carry Nation was often seen scurrying through the streets at night searching for her drunken husband, who had taken refuge in the Masonic lodge, where no woman was permitted to enter. Although still very much in love with her husband, Carry Nation returned to her parents' home, and a short time later her husband died a drunkard's death. His death was her explanation for subsequent saloon smashings.

Unable to support herself, she looked about for a second husband and eventually married Mr. Nation. This marriage also was unsuccessful as far as romance was concerned. She often said that her bitterest sorrows came from not having the love of a husband. Her second husband divorced her on the grounds of desertion. [Condensed from Asbury (1).]

MENTAL SYMPTOMS

Because of constitutional limitations or neuro-physiological defects, some individuals are incapable of orderly and effective adjustments. Their attack upon life problems is chaotic, impulsive, and inadequate. To secure some degree of inner har-

mony, they resort to radical protective or escape expedients, including delusions, hallucinations, regression, psychological invalidism, loss of memory, and other abnormal reactions. These neurotic and psychotic symptoms may be regarded as exaggerated mental mechanisms that have gotten out of control. Phantasies and rationalization have become delusions; identification has passed into impersonation; projections have developed into hallucinations and ideas of persecution; selective forgetting has grown into amnesia; simple withdrawal has given way to mutism and general inaccessibility; negativism has been greatly intensified; and reality evasion has been rendered superfluous by a severing of the bonds linking the individual with the external world.

Delusions.—According to White (11), delusions have three main characteristics:

1. They are bizarre beliefs that are obviously untrue and improbable.
2. They are subjectively determined beliefs that do not originate in experience and hence cannot be corrected by persuasion, facts, or appeal to reason.
3. They are out of harmony with the individual's education and surroundings.

Delusions are created and clung to because they serve some useful purpose. They are disguised wish formations designed to satisfy inner needs. They may be fixed or changeable, systematically and logically elaborated, or disorganized and incoherent. On the basis of content, delusions may be classified into four types, of which *delusions of persecution* are the most common. The patient imagines that his enemies are following him, spreading malicious lies concerning him, poisoning his food, and in many other ways taking unfair advantage of him. *Ideas of reference* often supplement delusions of persecution. Patients suffering from ideas of reference read hidden meaning in and assign personal significance to incidental occurrences. Thus if a patient notices two strangers conversing, he imagines they are talking about him. A cough or the backfiring of a car is a signal to him, an accidental glance is a meaningful glare, and a casual comment is a personal insult. Ideas of persecution

are largely projections. The unsought but willing girl complains to the police that men follow her, and the unsuccessful man blames enemies for his failure.

Delusions of grandeur are thinly veiled attempts at compensation for feelings of insecurity or inadequacy. By a twist of the mind, the individual becomes a millionaire, the ruler of the universe, or a great personage endowed with divine powers. Sometimes the expansive ideas are expressed in quaint fashion. A middle-aged gentleman dreaded dying because with his death the world would end.

Self-condemnatory delusions generally reflect a need for punishment. Ideas of poverty, unworthiness, and sin are common. The patient has committed some unpardonable crime; he is a brainless idiot and deserves to be deserted by God and man. He entreats his associates to starve him to death or chop off his head. That failing, he may attempt to take his own life.

Hypochondriacal delusions are concerned with an excessive preoccupation with imaginary physical or mental diseases. Even in the presence of contradictory evidence, there are persistent complaints of incurable ailments such as cancer or tuberculosis. Some patients state that their brain is wasting away, their stomach is gone, their blood is turning to water, or their bones are becoming fragile. Fear of going insane, losing one's mind, or undergoing a change in personality are common symptoms in borderline cases. *Hypochondriasis* is usually interpreted as an escape from life difficulties by a flight into disease. It is also a convenient method of rationalizing threatening defeat or lack of achievement. In some cases an element of self-punishment is discernible.

Hallucinations.—*Hallucinations* are sensory perceptions in the absence of any corresponding external sensory stimuli. When a person hallucinates, he hears nonexistent sounds, sees nonexistent objects, smells nonexistent odors, tastes nonexistent substances, or feels nonexistent stimuli. Strictly speaking, dreams are hallucinations, since persons and things perceived while asleep have no factual basis. For practical purposes, however, the use of the term "hallucination" is restricted to imaginary perceptions experienced in the waking state.

Hallucinations must not be confused with *illusions*, which are inaccurate perceptions of existing sensory stimuli. Misinterpreting the rustle of leaves for human voices or the sight of a twisted branch for a snake are illusions. By contrast, hearing the voice of God when no physical sound is objectively detectable, or seeing pink elephants charging you when no objects even faintly resembling elephants are near, are hallucinatory experiences.

Hallucinations are not necessarily indicative of abnormality. Normal individuals reared in cultures that encourage hallucinations as part of their religion may actually see or hear their deities. In our own culture, it is not uncommon for a healthy person to have a fleeting hallucination of hearing the telephone ring or a voice calling his name. These experiences, which occur especially in moments of anxiety or keen expectation, are appreciated by normal people for what they are—tricks of the imagination and wish fulfillments. For an hallucinatory experience to be pathological, it must be characterized by the same attributes noted for delusions. The content of the hallucination must be highly improbable to the point of being bizarre, and the person must stubbornly believe in the reality of the hallucinatory experience even when presented with more reasonable alternative explanations. Finally, the person reporting imaginary perceptions must be a member of a cultural group that does not encourage or regard hallucinations as natural phenomena.

Depending on the sense modality affected, hallucinations are classified as *auditory, visual, gustatory, kinesthetic, or olfactory*. Auditory hallucinations are by far the most common. The quality of the experience may be intense or moderate, clear or confused, familiar or strange. The patient's reaction to his hallucinations may be one of indifference, amusement, rage, or terror. The voices may be automatically obeyed, ignored, or fought against. More often than not, the content is unpleasant. Paranoid patients, for example, hear the threatening voices of their "enemies," see leering faces at their windows, feel electricity shooting through their bodies, smell bad odors in their rooms, and taste poison in their food. Occasionally the hallucinations

are agreeable. The patient hears voices saying nice things about him and sees delightful visions.

Hallucinations are independent of the intactness of the sense organs as well as of external stimuli. Rosanoff (8) has noted that completely deaf patients have no difficulty in clearly hearing imaginary voices. The images, sensations, and voices must, therefore, originate within the patient's own mind. In cases of toxic and organic cerebral injuries, the hallucinations may be interpreted as the result of stimulation of the specific brain centers that mediate sensory experiences. This physiological explanation does not have wide application in psychopathology, since most mental patients affected with hallucinations fail to exhibit any evidence of gross brain pathology.

Interpretation.—The psychogenic interpretation is that hallucinations are attempts at adjustment by projection. Wishes, conflicts, guilt feelings, and impulses that are a source of disturbance to the individual are projected outside of the self. True, the individual is not freed of them by this maneuver, since they return disguised as hallucinations; but, because they are now externalized, the individual is in a better position to tolerate, encourage, or fight against them. Thus a need for ego enhancement is more thoroughly satisfied if God or some person other than the self is the flatterer. A personal admission of immorality is incontestable and damaging to the ego, but an hallucinated accusation of identical nature can be vehemently denied. Noyes (7, p. 98) has illustrated this homeostatic aspect of hallucinations with reference to a particular case.

These projected images, which the patient accepts as reality, may express wish fulfillment, enhancement of self-esteem, defensive efforts, criticism, censure, self-punishment, the satisfaction of repressed and rejected impulses, a sense of guilt, and other psychological needs and situations. The way in which escape from a harsh and unsatisfying reality may be secured through projected image symbols is illustrated in the experience of a woman whose natural biological tendencies had been frustrated and who, because of personality inadequacies, had found economic and other social adjustments too great a burden.

One day as she was sitting on the bank of the Potomac River, preoccupied with her problems and hoping for some means of satisfactory

escape from them, she heard the voice of a former lover who had ceased his attentions as her personality limitations had become more apparent. In this thwarted and distressing state of affairs, she received from the old admirer a message pointing the way to an enchanting fulfillment of her fondest hopes. Although she could not see him, the patient heard the lover direct her to jump into the water, from which he promised to rescue her, and row to Norfolk, from which port they would sail to Egypt, there to occupy a beautiful castle. So convinced by the vividness of the message that reality was ignored, the woman threw herself into the water, where she would have perished except for some chance passers.

Regression.—Many normal adults, burdened with age and responsibilities, frequently yearn for the “good old days” of their childhood and youth when life was exciting, pleasant, and care-free; but apart from some wishful thinking on the subject, or a visit to old haunts, they make no serious attempt to return to the past. A few Peter Pans attempt to evade the disappointments and difficulties of advancing age by remaining perennial youths. Although not conducive to good adjustment, such behavior also is not necessarily indicative of abnormality. But when an adult escapes current difficulties by regressing to an infantile stage in spirit and conduct, he becomes an abnormal person.

This ontogenetic retreat is quite understandable. Childhood is the period of unlimited affection, security, and omnipotence. The slightest whims are satisfied and all attention is centered upon the child. As he grows older, however, the child forfeits the easy admiration and devoted services of his family and must compete with others for affection and success. Independent of parental intervention and protection, he must learn to take the hard knocks of life and accept responsibilities and defeat. Well-integrated and wholesome personalities enjoy this struggle with reality, but when the going gets too rough, the constitutionally less fit give up and regress to the sheltered and simple life of infancy.

The following description of a twenty-two-year-old man is an abbreviated account of a case reported by McDougall (6).

When I saw him shortly after his arrival in the ward, he was in a completely childish condition. He sat in bed alert and lively, like a

young child taking a keen interest in his new surroundings. He showed no trace of comprehension of spoken or written language and uttered no sounds other than "Oh sis-sis-sis." Given a pencil, he made no attempt to write; and he seemed to have little or no understanding of the use of ordinary utensils, most of which he examined with mingled expressions of curiosity and timidity.

All his motor functions seemed to be intact, save that when put on his feet, he walked jerkily, with short, hurried steps, the feet planted widely apart. As soon as allowed to do so, he slipped down upon the floor and crawled about with the aid of his hands, as some young children prefer to crawl. He could not easily be induced to obey simple commands conveyed by gesture, such as to put out the tongue, seeming to fail to grasp the nature of the command. He displayed no interest in letters and photographs of his relatives and friends which we found in his pockets. He could not or would not feed himself, and was fed with a spoon by the nurse, who, he insisted by gesture, had to taste each spoonful before he would take it, quite in the manner of some "spoiled" infants. He quickly adopted and became very devoted to a small doll kept as a mascot by a neighbor in the ward. Physical examination showed no abnormality beyond an occasional slight tremor of all limbs. The expression on his face consistently conformed to the rest of his behavior. It seemed at this time as though he had completely lost all the knowledge, understanding, and motor facilities that he had acquired since the age of some twelve or eighteen months; and that he had reverted to the mode of life, bodily and mental, which is normal to a child of some fifteen months of age.

Regressive behavior is not a conscious act the patient puts on. The performance is too real. On the other hand, the loss of function is not so complete as it appears on the surface. Although McDougall's patient crawled like a baby, he swam like an expert, and he smoked a cigarette when it was offered to him. Function is suspended rather than lost. In time, some regressed cases regain complete adult status.

Psychological Ailments.—There are several advantages in being ill. The sick are freed of all personal responsibilities and unpleasant duties. Friends shower them with attention, sympathy, flowers, and gifts. Within their own family they are privileged characters. The household routine is adapted to their

wishes, and the activities and welfare of other members of the family are sacrificed in their behalf. Under usual circumstances, the advantages of being well far outweigh these benefits, so that we resent being ill or incapacitated. There are times, however, when some ailment provides a simple solution to our problems. For the student who has failed to prepare for an examination, the housewife who dislikes her domestic chores, the businessman harassed by financial cares, or the soldier who fears the dangers of war, a flight into disease presents a tempting and socially acceptable mode of escape.

Of course, one cannot consciously fake a disease and retain the good opinion of associates and, what is perhaps more important, preserve one's self-esteem. A malingerer is a coward despised by himself and others. The wished-for ailment must overtake the individual unwittingly. Normal individuals find it difficult to deceive themselves in this simple fashion, but the less stable manage with equanimity to develop psychological aches and pains, paralysis, heart attacks, and gastrointestinal disturbances.

In addition to their attention-getting and escape value, psychological ailments in the hands of neurotic people are powerful weapons for dominating the social environment. Selfish parents frequently control the behavior of their children by well-timed headaches and fainting spells. Young men and women are frequently prevented from going away to college or getting married because their mothers or fathers have an attack, or develop some baffling disease whenever the children are on the point of leaving home. Children, in turn, utilize the same devices for their own ends.

A young widow, with a three-year-old son to take care of and no means of support, entered into an arrangement with a friend whereby she offered to take care of this friend's children and assist in the housework in return for room and board for herself and child. The household was large and there was a great deal of work, much more than the widow cared to do. She had no time for herself, and although she had suggested the arrangement, she resented the fact that she had to do all the heavy work. After several months, the woman developed a stiffness in her right arm which persisted for months in spite of all

medical attention. She continued to be as helpful in the home as was possible under the circumstances, but the friend had to do the dishes, the ironing, and the washing.

Memory Disorders.—Memory losses in excess of normal forgetting are included under the general heading of *amnesia*. There are two types of amnesia, *organic* and *psychogenic*. Memory losses resulting from actual damage to the brain are organic, and those identified with emotional trauma in the absence of cortical destruction are psychogenic. A distinction is sometimes made between *retrograde* and *anterograde* amnesia. The former term refers to loss of memory for material antedating, and the latter for experiences following, the occurrence of the brain pathology or the emotional disturbance.

Head injuries and cerebral destruction due to toxins, and the degenerative brain changes associated with aging, are the principal causes of organic amnesia. Following head injuries, the amnesia may be limited to events immediately before or after the injury. The disturbed state of the brain prevents adequate registration of impressions, and the memories are unrecalable because they have never been fixated.

Brain pathology due to toxins and old age generally results in diffuse memory losses affecting primarily the more recent memories. In addition, the capacity to acquire and retain new memories is generally seriously impaired. Some patients compensate for their inability to recall recent events by filling in their memory gaps with fictitious incidents that are accepted as actual occurrences. This is known as *confabulation*.

Psychogenic amnesia is precipitated by some intense emotional experience, for example the death of a loved one, financial reverses, or exposure to some terrifying or shameful event. The memory loss tends to be selective. Memories occurring over a period of time are not all indiscriminately wiped out as in organic amnesia. Details associated with the emotional trauma are especially forgotten. The purpose of the amnesia is to exclude painful or guilt-laden memories from consciousness. Thus a woman may remember her social and vocational history but completely forget all details associated with her marital life, or

a man may have a clear memory of his past except for an automobile trip that ended in disaster. Here it is not a question of inadequate cortical impression or cerebral decay. The experience is all too well embedded. It is not lost but merely misplaced. Because of psychological inhibition, the memories are unrecalable, but somewhere in the recesses of the mind they are still intact.

That the memories are not really lost is proven by the fact that they may be recalled by free association, hypnosis, and other special procedures. Psychogenic amnesia protects the ego and makes for mental harmony as long as the unpleasant memories eliminated from the stream of consciousness are weak and dormant. They constitute important sources of conflict and neuroses when they are strong and active and threaten to penetrate the wall of inhibition erected against them, or when they set up an independent existence of their own, leading to a dissociation of the personality.

Emotional Disorders.—The emotional reactions of the mentally ill, like those of normal people, are intimately associated with their needs, conflicts, frustrations, and adjustments. It is more difficult, however, to interpret the affective life of the neurotic and psychotic, because the underlying motives that precipitate emotional responses are often buried in the unconscious. Some of the main affective disturbances observed in mental patients are anxiety, euphoria, depression, and apathy.

Ranging from mild apprehension to acute panic, *anxiety reactions* are marked by tension, restlessness, tremor, rapid pulse, palpitation, nausea, and profuse perspiration. The feeling tone is one of vague impending calamity. A widely accepted concept of anxiety is that it is an admission of weakness and insecurity (4). Anxiety results when the individual is confronted with tasks and responsibilities that are beyond his capacity; is harassed by a stern conscience; or is faced with a threatened breakthrough of disowned impulses that have been repressed because of their immoral or antisocial nature. The biological purpose of anxiety, which is essentially a form of persistent fear, is to mobilize the resources of the body for flight or defense; but since the

forces threatening the anxiety patient are part of himself and hence inescapable, anxiety reactions have little adjustment value.

Euphoria is an optimistic state of general well-being. **Some-what** allied moods are *exaltation* and *ecstasy*. Exaltation consists of elation plus an element of grandeur. Ecstasy is more of a spiritual emotion marked by entrancing rapture. These reactions are pathological because they are out of keeping with the patient's actual circumstances, which may offer more grounds for sorrow than joy. Some patients go to the other extreme and are depressed and crushed with feelings of remorse and guilt. As in euphoria, there is nothing in the patient's recent life to justify his emotional state. A possible explanation is that these expressions of happiness and sorrow satisfy and are in accord with the inner life of the patient.

Apathy is more than an absence of emotion. It is a positive attitude of indifference toward all experiences and situations. Events that normally evoke joy, grief, shame, or sympathy have no effect upon the apathetic patient. Apathy serves as an effective insulator against an uncongenial world and in certain cases may be a passive act of defiance or scorn.

Toxic-organic Reactions.—Cerebral disturbances produced by toxins or destruction of brain tissue may give rise to a variety of symptoms that have only incidental psychodynamic significance. Their protective or tension-release value is slight. Some of the more common reactions are confusion, clouding of consciousness, restlessness, emotional instability, stupor, and disorientation. *Disorientation* is essentially a memory disorder and consists in an inability to orient oneself with respect to time, place, or person. A completely disoriented patient does not know the approximate year, has no appreciation of his surroundings, and does not know who he is.

Insight.—With rare exception, psychotic individuals have little or no appreciation of their mental state. They do not realize that they are insane. Either they are unconcerned about their mental status or they maintain that they are of sound mind. The protective value of this absence of insight is obvious. To be psychotic and not know it is a blessing, but to be consciously aware of one's insanity is to suffer acutely.

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CHAPTER IV

GENERAL CAUSES OF ABNORMAL BEHAVIOR

The causes of abnormal behavior are complex, and it is not always possible to isolate and evaluate the multiple factors involved. Some of the difficulties are listed below.

1. There are many varieties of mental deficiencies, psychoneuroses, psychoses, and antisocial personalities, and each variety tends to have an independent etiology. It is not a question of what is the cause of mental deficiency, psychoneurosis, psychosis, and antisocial behavior, but rather what is the cause of each specific clinical type included under these general headings.

2. Psychological disorders are usually due to the interaction of two or more agents. It is frequently difficult to ascertain the relative importance of each contributory factor. In almost all forms of hereditary diseases, some account must be taken of environmental influences; and the inherent resistance level of the organism is a complicating factor in all diseases of physiochemical or environmental origin.

3. The same symptom patterns may arise from a variety of different causes. Even when it is known that certain factors are responsible for a specific type of psychological disorder, it does not follow that these factors are always present in the same degree in all patients exhibiting similar symptoms.

4. The symptoms of the abnormal are not always tailored to fit standard disease entities. Often it is difficult to arrive at a definite diagnosis, and errors are quite common. These errors naturally complicate the task of evaluating the causes of specific diseases.

HEREDITY

Heredity is the enigma of psychopathology. Its importance is usually either exaggerated or underestimated. Almost every form of psychological deviation has been attributed by some

writers to hereditary causes and by others to nonhereditary ones. Experimental data with respect to individual diseases are reported in subsequent chapters. A summary of these findings indicates that approximately three-fourths of mental defectives and one-third of psychotic individuals owe their condition mainly to unfavorable heredity. Heredity is a contributory factor in an additional 15 per cent of psychoses, in many psychoneuroses, and in some cases of chronic antisocial or criminal behavior. It is relatively unimportant in juvenile delinquency and in most instances of mild or occasional criminality.

What Is Inherited.—One never inherits nervousness, anxiety, delusions, excitability, hallucinations, antisocial tendencies, convulsions, depressive states, urge to drink, or defective intelligence. All that one inherits are *genes*, which are submicroscopic chemical units that in some unknown way control the development of the nervous system and other parts of the body. The quality of the organs and tissues inherited in turn influences behavior potentialities, since in the final analysis all psychological reactions have a physiological foundation.

The final effect of any given set of genes is in no way absolute. A person who inherits genes that produce physiological structures favoring the development of some form of psychological abnormality is not necessarily destined to develop that abnormality. With such a hereditary handicap it will be easy for him to develop that disease, but whether he actually does or not will depend on the interaction of other genes and the external environment. {Tuberculosis, for example, is a hereditary disease. } A person who has inherited genes that produce a favorable physiochemical basis for developing tuberculosis will probably develop the disease if he is exposed to the tubercle bacillus; but if he avoids infection, he will not develop it. Diabetes is also a hereditary disease, but a person who inherits the predisposition to the disease may avoid developing overt symptoms by insulin medication.

In the field of psychological medicine the same situation prevails. { A person who inherits a predisposition to a mental disorder runs a high risk of developing the disease, but if he is reared in a protected and simple environment, he may never

exhibit overt symptoms. Similarly, a person who inherits genes that predispose him to have convulsions may avoid having attacks, or decrease their frequency, through suitable medication.

Where the controlling agent of some hereditary disease is unknown, however, it may be virtually impossible to prevent the appearance of symptoms. Thus a child who inherits genes that favor the development of mental and physical characteristics associated with certain forms of mental deficiency will probably show these traits, not because they are inevitable but because preventive or curative measures have not yet been discovered.

✓ **Genetic Principles.**—A person's heredity is sealed at the moment of conception, when the male sex cell, or sperm, penetrates the female sex cell, or ovum. The ovum and sperm each contain 24 chromosomes, and their union provides the fertilized egg with 24 pairs of chromosomes.

The billions of cells that make up the human organism at birth are derived from the repeated division and redivision of the initial fertilized cell. Located in linear order in the chromosomes, like beads on a string, are the *genes*, which are directly responsible for the transmission of inherited characteristics. An important quality of genes is that each maintains its integrity, particular constitution and properties in unaltered form from one generation to the next. They are in no way affected by the life experiences of their temporary host. Traits, skills, and diseases that are acquired by the parent do not modify the genes he passes on to his children.

Like chromosomes, genes occur in pairs. For every gene present in the chromosomes released by the male sex cell, there is a corresponding gene present in the paired chromosome contributed by the female sex cell. Thus if a specific gene has to do with eye color, the gene located in the same position on the paired chromosome also is concerned with eye color. This double inheritance creates an important biological problem. Assuming that a child inherits genes that produce blue-eyedness from the mother and genes that produce brown-eyedness from the father, what will be the eye color of the child?

Gregor Mendel, the father of genetics, offered a simple solution on the basis of his theory of dominant and recessive factors.

Experimenting with peas in the garden of an Austrian monastery, Mendel noted that when yellow peas were crossed with green peas, all the first-generation peas were yellow. When the first-generation peas were crossed with each other, green peas reappeared in the second generation in the ratio of one green to three yellow peas. Mendel's findings, interpreted in terms of present-day knowledge, meant that the color-producing genes of the yellow peas, which may be indicated by the symbol DD , were dominant and held in check the recessive rr genes of the green peas. In crossing pure DD yellow peas with pure rr green peas, each of the D genes of the yellow peas was paired by chance with one of the r genes of the green peas, so that the first-generation peas had a hybrid Dr composition. For purposes of distinction, pure DD or rr gene pairs are called *homozygotes* and hybrid Dr pairs are referred to as *heterozygotes*. On recrossing heterozygotic Dr peas with each other, one-fourth of the second-generation peas had an rr combination and were green; one-fourth had a DD combination and were yellow; and one-half were Dr and also yellow.

In the case of eye color, brown eyes tend to be dominant over blue eyes. When one parent is brown-eyed (homozygous) and the other is blue-eyed, the first-generation children are usually, but not always, brown-eyed. If the brown-eyed parent is heterozygous, resulting in a $Dr \times rr$ mating, one-half of the children, having Dr genes, should be brown-eyed, and the other half, with rr genes, should be blue-eyed. Actually, these ratios are rarely obtained.

One explanation that has been offered to account for exceptions to the Mendelian pattern is that some genes are only partially dominant or partially recessive. A second and perhaps more significant explanation is that although individual genes may play key roles in the production of certain inherited traits and defects, they do not exercise complete control. It has been experimentally demonstrated that each gene affects several traits, and every trait depends on the interaction of many genes whose combined influences are not always predictable on the basis of simple Mendelian ratios.

Application to Psychopathology.—With a few exceptions, hereditary forms of psychological deviations are of the recessive type. One important advantage of this fact is that the incidence of hereditary defects is much lower than it otherwise would be. If a disease were transmitted by dominant genes, the parent having such genes and a substantial number of his children would be affected even if the corresponding genes of the other parent were perfectly normal. On the other hand, if a disease were transmitted by recessive genes, the parents would not be affected, and the children would be affected only if they received defective genes from both their parents and these genes were located in identical positions on paired chromosomes (11). Should the defective genes be located in different positions on the chromosomes of the two parents, the defective genes inherited by the child from one parent would be paired with dominant normal genes from the other parent, and no abnormality would be noted in any of the children.

A child who receives defective paired genes from both parents runs a high risk, but he is not definitely destined to develop the disease in question. The reason for this is that the penetrance or manifestation rate of genes is far short of 100 per cent. In a substantial number of cases the latent predisposition is held in check by various biological and environmental influences.

A disadvantage associated with having a disease transmitted by recessive genes is that the difficulty of eliminating it by eugenic measures is greatly increased. Because of recessive defective genes, it is possible for parents who are themselves apparently normal to have feeble-minded, mentally diseased, or otherwise defective children. Actually, most hereditary diseases are transmitted in this fashion. The great majority of children suffering from hereditary forms of psychological disorders have normal parents who are heterozygotic carriers of defective genes.

Methods of Investigation.—The evidence in support of heredity as the cause of certain forms of psychological disorders is based on family investigations and twin studies. The former method, which is more common, consists of ascertaining the incidence of a particular disease among the close relatives of

patients. If heredity is important, one should find that the disease in question is more prevalent among the relatives of affected persons than in the general population, and more common among close relatives such as brothers, sisters, and children than among more distant relatives such as nephews, nieces, and grandchildren. However, except in rare instances, one should not expect to find more than a small proportion of the members of a family group to be affected, since each member, with the exception of identical twins, receives a different combination of genes and hence differs in his susceptibility to hereditary defects.

Twin Studies.—The importance of twins for studies in heredity rests upon the fact that there are two kinds of twins, *identical* and *fraternal*. Identical, or *monozygotic*, twins result from the fertilization of one ovum by a single sperm. The single fertilized cell subsequently divides into two duplicate parts and each part becomes a separate individual. Since identical twins have identical genes, they closely resemble each other with respect to physical and mental traits and are always of the same sex. Fraternal, or *dizygotic*, twins result from the fertilization of two distinct ova by two different sperms. Fraternal twins are siblings who happen to be born at the same time. They have dissimilar sets of genes, may differ greatly in physical and mental traits, and may be of the same or opposite sex.

In hereditary studies based on twins, the procedure consists in locating a large number of unselected twins who have a particular disease and then determining whether the co-twin of each pair is similarly affected and whether the twin pairs are of the fraternal or identical type. If a significantly higher percentage of identical than of fraternal twin pairs are both affected by the same disease, heredity is probably an important factor; but if the disease is as prevalent among the co-twins of fraternal as of identical pairs, heredity is unimportant. One limitation of twin studies is the difficulty of determining whether a particular set of like-sexed twins are of the fraternal or identical variety. There is no infallible test, and errors in classification are not uncommon. Since twin investigations are usually based on a small number of cases, the incorrect classification of a few pairs may result in erroneous conclusions.

CONSTITUTIONAL FACTORS

Definition.—As generally used in psychiatry, the term *constitution* refers to the total biological assets and liabilities of an individual, whether innate or acquired, that determine his reactive potentialities and his resistance or susceptibility to disease. Included under this heading are the more stable components of the individual's make-up, for example his bodily build, sex, and temperament, as contrasted with his social attitudes, habits, and other more changeable components. Constitution is mainly determined by heredity and endocrine function, but it is by no means fixed and unalterable. It is subject to modification by age and environmental factors, especially those that affect the physiology of the individual, such as diet and physical disease.

Physique and Personality.—The intriguing game of classifying people into physical types and predicting personality on the basis of bodily traits antedates Hippocrates. About every half century it is "discovered" that individuals fall into certain physical categories and that there exists a close affinity between physique and personality. For a time, each new theory is enthusiastically received. Gradually it is discredited, but above the death knell of the rejected theory rises the birth cry of the succeeding theory, which is hailed as "original and penetrating." This, too, is granted its hour of triumph and then discarded until again revived in new verbal dress a few years later (20).

The repeated rejection and rebirth of the doctrine of physical types suggests that there is some foundation for it, but the foundation is shaky and will not bear too close investigation. In a very general way it is possible to classify many individuals as to whether they are primarily of the long-thin, short-stocky, or athletic-muscular build. However, this is obviously a rough classification since most individuals do not fit well into any of these groups, and even those who do so may differ greatly from others placed in the same category. Human physiques are not turned out from a few standard molds. Actually, they

are infinitely varied, and in a strict sense there are as many types as there are individuals.

This is only one weakness of the doctrine. When the proponents of type theories assign specific psychological attributes to various physical builds, they are really in deep water; for individual differences with respect to psychological characteristics are even more marked than for physical traits. In addition, there is no scientific basis for assuming that physique and personality are intrinsically correlated. Long-thin or short-stocky individuals may have a wide variety of personalities, but here again there is a kernel of truth in that the same hereditary factors which determine bodily build also contribute to the temperament or prevailing emotional tempo of the individual.

Since attitudes and social adjustments are in part affected by physique and temperament, a case might be made for the theory that persons having similar physiques and temperaments tend to have similar life experiences and hence might be expected to develop similar personalities. Thus individuals endowed with thin, frail physiques and limited energies may be severely handicapped in their social relations. As a result of the interaction of their biological inadequacies and unfavorable social experiences, they may develop into quiet, sensitive individuals who are more interested in daydreams than in the realities of life. Conversely, individuals gifted with sturdy, attractive physiques and unlimited energy may, as a consequence of favorable social experiences, develop into good-natured, outgoing, enthusiastic realists.

Kretschmer's Classification.—Current interest in constitutional types is largely due to the brilliant writings of Kretschmer (15). According to this German psychiatrist, there are four main physical types—*pyknic*, *asthenic*, *athletic*, and *dysplastic*. *Pyknic* individuals have robust, well-rounded figures with a tendency toward shortness and stoutness. Trunk and body cavities are large. Chest and shoulders are rounded. The neck and limbs are short and stocky. The face is full, smooth, and shield-shaped. *Asthenics* have thin, flat, delicate physiques. They are slender individuals with long, lean limbs and flat, narrow chests. The head is often elongated and the facial features are

sharp. The general impression is one of angularity. The athletic build is characterized by good muscular and skeletal development, including broad shoulders, large hands, and long, sturdy limbs. Dysplastics have malproportioned and atypical physiques. Placed in this category are the various abnormalities in physical development associated with endocrine dysfunction.

The psychiatric significance of Kretschmer's classification was his observation that mental patients suffering from schizophrenia usually have asthenic or athletic physiques, whereas manic-depressive patients have pyknic builds. In personality make-up, schizophrenic patients are seclusive, apathetic, cold individuals who have isolated themselves from the external world by withdrawal into the self. Manic-depressive patients are essentially sociable individuals who are either extremely elated and excited or depressed and listless.

On the basis of this finding, supplemented by general observation among normal people, Kretschmer concluded that the same germ plasm that leads to the formation of certain body types also favors the development of specific personality patterns. He maintained that individuals having asthenic or athletic physiques tend to be shy, seclusive, sensitive people who shun social contacts and spend much of their time daydreaming. They are emotionally repressed and their approach to problems is theoretical and idealistic. Usually they are prudish and humorless. Healthy individuals exhibiting these characteristics to a mild degree are *schizothymes*. Borderline or abnormal persons showing these traits to a marked degree are described as having *schizoid* personalities. On the other hand, persons with well-rounded pyknic bodies are inclined to be genial, talkative, uninhibited individuals who enjoy social contacts. Their approach to problems is practical and realistic. They express their emotions freely and warmly, but at times they become unduly elated or depressed. Depending upon whether they exhibit these characteristics to a moderate or a severe degree, these individuals are classified as having *cyclothymic* or *cycloid* personalities, respectively.

To prevent misunderstanding, it is well to emphasize that a

person's physique has nothing to do with whether he becomes psychotic or not. It merely influences the type of mental disease he would develop if he should become psychotic. If an asthenic person becomes psychotic, he is more likely to develop schizophrenia than manic-depressive insanity, and conversely, an individual with a pyknic physique is more likely to develop a manic-depressive psychosis.

The spectacular nature of Kretschmer's conclusions, with respect to the intercorrelation of physique and personality in normal people and the association of certain physiques with certain psychoses in the pathological field, led to a multitude of investigations on the subject. The net outcome of these studies appears to be that Kretschmer was partly right and partly wrong.

Most experimental studies based on normal subjects have yielded negative or equivocal results (4, 14). Studies conducted with mental patients have been more favorable. Various workers have confirmed Kretschmer's finding that two-thirds of manic-depressive patients in mental hospitals have pyknic physiques and two-thirds of schizophrenic patients have either asthenic or athletic builds. However, it is now realized that these data are more or less invalidated by the age difference between schizophrenic and manic-depressive patients. Schizophrenia is primarily a disease of early adulthood, whereas manic-depressive psychosis affects primarily the middle-aged. The observed differences in bodily build between the two groups are mainly due to the fact that as individuals pass from early adulthood to middle age, they frequently put on weight and their physiques change from asthenic or athletic to pyknic (3).

Sheldon's Modification.—Kretschmer fully realized that it is impossible to classify all individuals as pure asthenics, athletics, or pyknics. His writings contain many references to intermediate types and to individuals exhibiting a mixture of traits. Unfortunately, his attempts to integrate these intermediate and mixed types into his concept of trimodality were unsuccessful and left his work open to criticism. A second weakness of the Kretschmerian classification was its failure to specify precise anthropometric criteria for each type. Both of these criti-

cisms have been ingeniously answered by Sheldon (20), an American investigator.

Unlike previous workers who had unsuccessfully wrestled with the problem of reducing all physiques to a few standard types, Sheldon assumed at the outset that people differ in physical traits. He then suggested that these differences could be expressed as quantitative variations of three basic components. He called the first component *endomorph*y, the second *mesomorph*y, and the third *ectomorph*y. Endomorphy refers to the relative predominance of softness and roundness throughout the body. When this component is high, the individual is fat and the digestive viscera are massive. Mesomorphy is characterized by a relative predominance of muscle, bone, and connective tissue. Individuals having a mesomorphic physique are massive, solid people with large bones, big joints, and heavy muscles. Ectomorphy means relative predominance of linearity and fragility. Individuals having a high ectomorphic component have slender limbs and bodies.

As is apparent, these three components correspond approximately with the pyknic, athletic, and asthenic types, but an important new angle is now introduced by Sheldon. On the supposition that all three components are present in varying degree in all persons, Sheldon rates individuals with respect to the amount of each component exhibited. His scale values range from 1 through 7, with 1 indicating a relative absence of that component. Numerical ratings are assigned on the basis of general inspection plus anthropometric measurements. This procedure makes it possible to describe an individual's physique, or *somatotype*, by a three-digit number, the first digit representing the amount of endomorphy present, the second the amount of mesomorphy, and the third the amount of ectomorphy. Thus 163 would be a physique deficient in endomorphy, high in mesomorphy and moderate in ectomorphy. To date, 76 different physiques have been isolated and described, the most common among college students being 344 and 443. As to the origin of somatotypes, Sheldon is noncommittal. He mentions heredity, the endocrines, diet, and early environmental factors as possible determinants.

Sheldon (21) also recognizes three components of temperament, each component, like those of physique, having a scale value from 1 through 7. The three components of temperament are called *viscerotonia*, *somatotonia*, and *cerebrotonia*. The extreme viscerotonic is characterized by a love of comfort and an interest in social gatherings and food. Individuals of this temperament express their feelings easily and their interests are outgoing. In brief, viscerotonics resemble cycloids. The extreme somatotonic is an active, energetic person who is self-assertive, aggressive, and somewhat noisy. He is most concerned with affairs of the present and is a doer rather than a thinker. The extreme cerebrotonic resembles a schizoid. He inhibits his feelings, is sensitive to distractions, shrinks from crowds, and meets his troubles by seeking solitude.

Like Kretschmer, Sheldon maintains that there exists a close relationship between physique and temperament and between physique and psychosis. Viscerotonia is the characteristic temperament of the endomorph, somatotonia is the typical temperament of the mesomorph, and cerebrotonia is the characteristic temperament of the ectomorph. According to Sheldon, the ectomorphic component predominates in certain types of schizophrenic patients, and the mesomorphic component is high in other types. The great majority of manic-depressive patients exhibit a combination of endomorphic traits.

Psychological Types.—The concept of psychological types, like that of physical types, has a long history. William James (10) recognized two types, the *tender-minded* and the *tough-minded*. Tender-minded individuals are guided in their behavior by abstract principles. They tend to be intellectualistic, idealistic, optimistic, religious, and dogmatic. Tough-minded individuals are realists whose actions are governed by facts. They are more interested in bodily sensations than in ideas, and they tend to be materialistic, pessimistic, irreligious, and skeptical.

Credit for popularizing the doctrine of psychological types, however, goes to Jung (12), whose concept of *introversion-extroversion* has become common knowledge. Extroversion implies a turning outward of interests and energies, with highest

values being placed on external, or objective, things. **Introversion** implies a turning inward of interests and energies, with highest values being placed on subjective, or personal, factors. Jung explicitly states that every individual possesses both tendencies. It is only the relative dominance of the one over the other, determined by outer circumstance and inner disposition, that decides whether a person will be an introvert or an extrovert. An "introvert" is an individual who habitually thinks, feels, and acts in such a way as to demonstrate clearly that the self is the chief factor of motivation and that the objective world is of secondary importance. An "extrovert" is a person who habitually thinks, feels, and acts in relation to external objects. Some of the personality traits commonly accepted to be those characteristic of introverts and extroverts are listed below.

Introvert Characteristics

1. Behavior determined by subjective considerations
2. Quiet, aloof, secretive, prefers solitude
3. Inflexible, rigid, lives by rules and ideals
4. Touchy, sensitive, suspicious
5. Given to daydreaming and self-analysis
6. Emotionally reserved, unsympathetic, cold

Extrovert Characteristics

1. Behavior determined by objective environment
2. Talkative, good mixer, confiding, prefers company
3. Adaptable, practical, conduct governed by expediency
4. Tough-minded, indifferent to criticism, not suspicious
5. Rarely daydreams or engages in self-analysis
6. Emotionally uninhibited, impulsive, genial, warm-hearted

In evaluating Jung's classification, it is important to remember that the world is not made up of two distinct groups of people, introverts and extroverts. Only a few individuals characteristically react in an introverted or extroverted fashion. The overwhelming majority exhibit both tendencies in varying amounts and therefore are neither introverts nor extroverts but are *ambiverts* (8). As is shown in Fig. 4, introverts, ambiverts, and extroverts merge imperceptibly with one another to form a continuous group. This reduces but does not destroy the usefulness of the concept, since people differ from one another with respect to this aspect of personality, and, depending on their

position on the continuum, may be classified as exhibiting varying degrees of introvert or extrovert tendencies.

It will be observed from the above description that introverts have many of the qualities of schizoids and that extroverts, in a general way, resemble cycloids. The clinical significance of this similarity is that if introverts become psychotic they usually develop schizophrenia rather than manic-depressive insan-

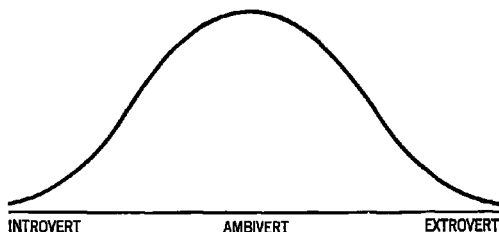


FIG. 4.—The distribution of introversion-extroversion in the general population. The distribution is continuous, with very few individuals exhibiting marked introvert or extrovert traits. Most people show a mixture of both tendencies and are best described as ambiverts.

ity, whereas extroverts show a greater tendency toward the latter disorder.

The main value of the doctrine of personality types in the psychoneuroses is that introverts and extroverts tend to develop different forms of psychoneuroses. Also, there is some evidence that introverts are somewhat more predisposed to psychoneuroses than extroverts.

THE ENDOCRINES

Figure 5 shows the location of the endocrine glands of main psychological interest. Relatively small in structure, these organs have as their function the manufacture of chemical substances known as *hormones*. Hormones are internal secretions that are discharged into the blood stream, which carries them to various tissues. Though minute in quantity, they are unbelievably potent in their effect upon body structure and function. Two important characteristics of the endocrines are their

interreaction and interdependence. An overactivity or underactivity of any one of these glands generally has repercussions on the functioning of the others. Two or more endocrines may exercise joint control over specific functions. In the following

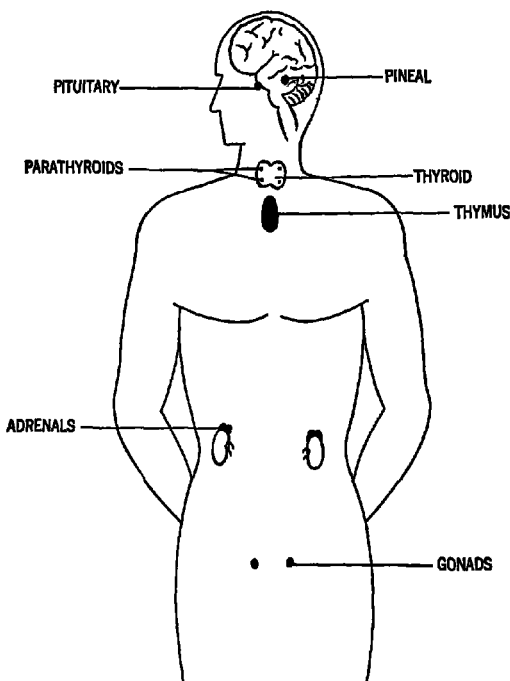


FIG. 5.—The location of the endocrine glands in man.

analysis each gland is treated individually, but it must be remembered that they function as an interlocking unit, each influencing the others.

Thyroid.—The rate of living is determined by *thyroxine*, the hormone of the thyroid gland. A marked deficiency reduces the individual to a vegetative, imbecilic level; a marked excess may transform a previously normal person into a tense, unstable

individual. More moderate secretory deviations produce changes ranging from lethargy and mental dullness to psychomotor hyperactivity and general alertness. The principal ingredient of thyroxine is iodine. Seafood, vegetables, and water with an iodine content constitute the principal natural sources.

The amount of circulating iodine required for normal thyroid functioning is infinitesimally small. Even so, there are many areas where the usual diet is deficient in this important chemical. The Great Lakes section in this country and the Swiss Alps in Europe are notable examples. Until comparatively recent years, when it was found that iodized table salt was a simple and effective preventive, these areas had a high incidence of *cretinism*, *myxedema*, and *colloid goiters*, the three diseases resulting from thyroid deficiency.

The main distinction between cretinism and myxedema is one of age. Pronounced thyroid deficiency occurring in infancy or early childhood leads to cretinism; if it occurs in later life, the disease is called myxedema. Cretins are misshapen, feeble-minded dwarfs. One is impressed by their heavy features and stupid expression. In appearance they are about what we might imagine a normal individual would look like if he were placed in a compressing machine and crushed to one-half normal size. If prompt and continued, thyroid medication often results in the elimination of physical symptoms and some mental improvement. Once firmly established, cretinism is incurable. Like cretins, myxedema patients are overweight, have puffed facial features, and are mentally sluggish. Because of the delayed onset of the disease, these individuals are usually of average height and are rarely feeble-minded. Prognosis following thyroid medication is favorable.

Ranging from a mild swelling of the neck to the presence of large pendulous masses, *colloid goiters* are due to an enlargement of the thyroid gland. In a desperate attempt to compensate for the relative absence of iodine in the diet, the gland produces an excessive amount of thyroxine of poor quality. This creates a storage problem that is solved by the enlargement of the gland. The toll of the disease is slight. Some disfigurement

of the neck and a tendency toward obesity are the principal symptoms.

An excessive discharge of thyroxine accelerates the metabolic processes of the body, leading to loss of weight, rapid pulse, tremors, restlessness, and insomnia. The condition is sometimes referred to as *Graves' disease*. Intelligence is not affected, but the individual is irritable, nervous, and unstable. The gland may enlarge to form an *exophthalmic goiter*, so called because of the peculiar bulging outward of the eyes that gives the victim a startled expression. Relief may be obtained by expert surgical removal of a portion of the thyroid gland (9).

Parathyroids.—The calcium equilibrium of the body is controlled by four or more tiny structures, the parathyroids, which are imbedded in the thyroid gland. Removal or destruction of the parathyroids results in *tetany*, a disorder marked by muscular tremors and twitches, cramps, and convulsions. The resulting chronic irritability of the nervous system makes for emotional instability and easily provoked outbursts of rage. Symptoms may be checked by the injection of calcium salts or administration of parathyroid extracts.

Adrenals.—The two adrenal glands are found at the upper tip of each kidney. Each gland consists of two parts, an outer layer called the *adrenal cortex* and an inner core, the *adrenal medulla*. The two parts secrete separate hormones having different functions. The secretion of the cortex is *cortin*, a chemical compound essential to life. A deficiency of cortin produces Addison's disease, a disorder marked by increased fatigability, anemia, loss of appetite, listlessness, insomnia, irritability, and darkening of the skin.

Overactivity of the adrenal cortex stimulates the development of male sex characteristics in both sexes (23). Women who grow beards and develop masculine physiques suffer from an excess of cortin. An oversecretion of cortin during early life in boys hastens the puberty period. Although still infants in years, they attain the stature, strength, and sexual maturity of puberty. A child three or four years old may exhibit the physical and sexual maturity of an adult (18). *Pubertas praecox* is the name assigned to this form of precocious virilism. The mental

development does not keep pace with the accelerated physical growth. Actually, most *pubertas praecox* patients are slightly retarded in intelligence. Their mean IQ, obtained by dividing mental age by true calendar age, is about 85 (13). An oversecretion of cortin in males during adulthood is chiefly marked by excessive growth of body hair.

Adrenin, the product of the adrenal medulla, is an emergency hormone. Under normal conditions, little, if any, adrenin is secreted, but in times of great emotional stress it is discharged in detectable quantities. As shown by Cannon (5) in his classic experiments on fear, anger, and rage, adrenin has the unique power of mobilizing the total resources of the body for vigorous action. Fear and rage situations demand that the muscles involved in flight or attack be plentifully and quickly supplied with fuel and oxygen for conversion into energy. For greater efficiency, waste products must also be speedily eliminated and unnecessary, distracting activities suspended. Adrenin accomplishes this feat by speeding up circulation, facilitating breathing, and releasing sugar stored in the liver to replenish used-up food supplies. For greater efficiency, a considerable amount of blood, the vehicle for transmission of supplies, is detoured from the center of the body to the outer front lines. The activity of the digestive organs is suspended, a feature that incidentally accounts for the occurrence of gastrointestinal disorders during periods of prolonged intense emotion.

In primitive days, when it was possible to flee from or destroy threatening and thwarting objects and persons, this mobilizing function served a highly useful purpose. Modern man, however, cannot run away from his fears or strike down his enemies with brute force. Threatened loss of position or savings, personal grievances, and frustrations still stimulate the flow of adrenin, but no appropriate outlet is available for the resulting energy. The individual is on edge and eager for action, but is constrained by social conventions to inhibit his impulses. This bottling up of excess energy is an important cause of tension, irritability, fatigue, and neurotic symptoms.

Pineal.—The pineal gland, which receives its name from its pine-cone appearance, is attached to one of the ventricles of the

brain. It is a gland of mystery. Descartes regarded it as the seat of the soul, the connecting link between mind and body. Present-day opinion is that the pineal, in some unknown way, regulates the rate of body growth and the onset of puberty.

Thymus.—This gland is situated near the point of junction between the neck and the chest cavity. Whether it produces a hormone and what function it serves are not definitely known. Since the thymus is large until puberty and then shrinks, there is a possibility that it is related in some way with the functioning of the sex glands.

Gonads.—The *testes* or male sex glands have two important functions, the production of sex cells and the manufacture of hormones that accentuate the development of masculine physical and mental traits. *Testosterone* and *androsterone* are two of the principal male sex hormones that have been isolated (1). These hormones are secreted in abundance during puberty and are responsible for the growth of the sex organs, appearance of hair on the face and body, deepening of the voice, and gradual development of masculine musculature and body shape.

The female sex glands, the *ovaries*, are concerned with the manifold processes associated with ovum production, menstruation, and pregnancy. Like the testes, they also secrete hormones, classified as *estrogens* and *progestins*, that promote sexual maturity and influence the development of physical and psychological sex characteristics. In the late forties, women undergo a change of life called the *menopause*, or *climacteric*. In addition to physical symptoms, the menopause period is sometimes marked by psychological reactions. Irritability, restlessness, mental depression, and insomnia are common complaints. These are partly due to physiological causes, but there is also a psychological element in that women are often taught to expect difficulties during this period. The symptoms are more pronounced in neurotic than in stable women. In many cases they are as easily alleviated by psychotherapy as by the administration of sex hormones.

Pituitary.—Because of its influence on other glands, the pituitary is sometimes referred to as "the master gland." It consists of two main parts, an *anterior* lobe and a *posterior* lobe. The

posterior lobe exercises some control over blood pressure, kidney function, fat metabolism, and the contractility of smooth muscles. The anterior lobe has the greater psychological significance. It originates from embryological mouth tissue. Best known of its many hormones is *somatotropin*, the growth hormone.

If excessive somatotropin is secreted during the growing years, the child grows to be a seven- to nine-foot giant. Giants are usually sterile, have approximately average intelligence, and are short-lived. If the overactivity of the growth hormone is delayed until adulthood, the maturity of the organism prevents further increase in stature. Growth is then limited to a general thickening and expansion of bony structure at the extremities. Over a period of years, the lower jawbone becomes elongated, the circumference of the head increases, the bones of the wrist, hands, and feet thicken, and the nose widens. This results in giving a previously normal individual a gorillalike appearance. The condition is known as *acromegaly*.

A deficiency of somatotropin dating from early infancy results in a *midget*. Unlike cretin dwarfs, midgets possess approximately average intelligence (22) and their bodies are correctly proportioned. They grow up to be well-shaped miniature adults.

Prepubertal destruction of the pituitary gland prevents gonadal development, and postpubertal destruction causes a sexual regression. Maternal behavior, including lactation, may be experimentally induced in virgin female animals by the injection of *prolactin*, an anterior pituitary product. Still other hormones stimulate the thyroid gland and regulate the activity of the adrenal cortex (9).

Some involvement of one or both pituitary lobes is present in *Fröhlich's syndrome*. The two outstanding symptoms are obesity and sexual infantilism. Although it may occur in either sex, the disease is most apparent in the familiar "fat boy" who has underdeveloped sex organs, a high-pitched voice, a girdle of fat about the hips, well-developed breasts, and a clear "peaches-and-cream" complexion.

ENDOCRINOLOGY AND PSYCHOPATHOLOGY

Individuals with profound endocrine imbalance are rarely happy or well adjusted. In a small percentage of cases, the psychological symptoms are probably a direct result of hormonal dysfunction. The apathy of the hypothyroid, the anxiety and restlessness of the hyperthyroid, and the fatigue and irritability associated with cortin deficiency might be included under this heading. More commonly, however, the only direct effect of glandular dysfunction is to produce physical anomalies that in turn provide fertile soil for the growth of distorted personalities. It is not easy for midgets, bearded ladies, giants, and obese persons to remain good-natured and mentally serene when they are continuously exposed to ridicule, jest, and social isolation. This harsh and unfair treatment makes many of them morose, hypersensitive, seclusive, depressed, and misanthropic.

The extent to which the more severe forms of psychological disorders are due to endocrine disturbances is a controversial issue. Like other organ systems, the endocrines play an important part in bodily, mental, and emotional development, and if defective, they may constitute an added burden contributing to abnormal behavior. However, it is extremely doubtful that *endocrinopathies*, in themselves, are directly responsible for more than a small percentage of mental abnormality. A fair number of mentally defective, psychoneurotic, psychotic, and antisocial individuals do show physical anomalies of types common in endocrine dysfunction, but this is more likely an incidental than a causal relationship. Many normal individuals have similar physical anomalies.

In support of the theory that the endocrines are relatively unimportant causes of psychological deviations, the following experimental findings may be cited:

1. Less than 5 per cent of first admissions to institutions for epileptics, mental defectives, and the mentally ill are placed in diagnostic categories implying endocrine origin.
2. The incidence of psychoses and psychoneuroses among patients referred to endocrinologists for diagnosis is about the same as that noted for the general population (19).

3. No constant or significant defects of a causative nature have been observed in the endocrine glands of various types of mental patients examined at autopsy (6).

4. A few investigators have reported beneficial results from treating mental deviants with extracts and preparations of various endocrine glands, but the overwhelming majority of workers have observed little or no improvement following endocrine therapy (6).

THE NERVOUS SYSTEM

In describing the human nervous system, a distinction is usually made between the *cerebrospinal* and the *autonomic system*. The former consists of the brain and the spinal cord. The autonomic system is a semi-independent collection of nerve cells located mainly outside and along either side of the spinal cord. The two systems are closely interrelated structurally and functionally. Many of the nerve cells and fibers of the autonomic system lie within the cerebrospinal system. This structural relationship makes for functional interaction. In general, however, the cerebrospinal division is primarily concerned with receiving and organizing sensory impulses, delivering motor impulses to the skeletal musculature, and engaging in higher mental processes. The autonomic system is more concerned with the control of the internal environment through stimulation of the endocrine glands, the heart, and the smooth muscles of the gastrointestinal, respiratory, and circulatory systems.

Spinal Cord.—Apart from mediating simple reflex actions, the main function of the spinal cord is to conduct *afferent*, or sensory, impulses from various parts of the body to the brain and to conduct *efferent*, or motor, impulses from the brain to the muscles and limbs.

The Brain.—As the “seat” of intelligence, judgment, memory, and integrative behavior, and as the neural center for controlling excitation-inhibition and the experiencing of emotions, the brain undoubtedly plays an important role in almost all forms of psychological disorders. However, attempts to establish causal relationships between abnormalities in brain structure and abnormalities in psychological functioning have met with meager

success. In anatomical detail, the brains of delinquents, criminals, and psychoneurotic individuals are indistinguishable from those of normal people. At most, only about one-fourth of mental defectives and one-third of psychotic individuals exhibit anatomical brain defects or injuries that might be interpreted as the direct cause of mental retardation or psychotic symptoms. The absence of structural brain abnormalities in most deviants does not necessarily rule out the importance of the nervous system, since it may be that the brains of abnormal people, though anatomically intact, may be distorted in their functioning.

The recent development of techniques for amplifying and recording the electrical potentials generated by the brain cells, popularly known as "brain waves," provided an unusual opportunity for exploring this possibility. The findings, however, have not been very encouraging. When electrodes are placed on various parts of the head, especially in the region of the *occipital*, *parietal*, and *temporal lobes*, the most prominent characteristic of the brain rhythms, or *electroencephalograms*, of normal people is an *alpha* wave having a frequency of 8 to 12 cycles per second. Characteristic abnormalities in brain rhythms have been observed among epileptic patients, but the deviations noted in all other forms of psychological disorders have been neither consistent nor specific (16).

The two parts of the brain that at present appear to have special significance for abnormal behavior are the *frontal lobes* and the *hypothalamus*. The frontal lobes, which include that part of the cortex in the forehead region, are unusually large in man. Removal or destruction of the frontal lobes, especially if extended to both lobes, results in a marked impairment of the capacity for constructive planning. Intelligence, as measured by objective tests, is relatively unaffected, but the simple elements of a situation cannot be organized into a complex integrated whole. This defect is referred to by various observers as a lack of mental synthesis or a disturbance in planned administration.

A second outstanding characteristic following destruction of the frontal lobes is a loss of initiative. The patient may know what he should do but he is unable to carry out his plans. In

their social reactions, individuals deprived of these lobes are tactless, unrestrained, and deficient in self-consciousness. Perhaps because of their inability to anticipate future events or comprehend the full significance of a situation, they are less troubled by anxiety and worry than before the operation. They tend to be uncritical of their mistakes and are easily satisfied with a poor performance. Unproductive restlessness and heightened distractibility are common. Emotions are uninhibited. Some patients are euphoric and others are irritable, apathetic, or dejected. In all cases where both lobes have been removed because of tumor or infection, the patient has been handicapped to the extent of being unable to work for a living (7).

The hypothalamus, which is located in the *diencephalon*, or middle brain, plays an important part in emotions. Injuries or lesions in this area are usually associated with disturbances in feeling and emotional expression. If all of the brain above the hypothalamus is removed, a cat will exhibit the physical signs of rage on the slightest provocation, but if the hypothalamus is also removed, rage responses can no longer be elicited (2). Further confirmation of the importance of the hypothalamus with respect to emotions is supplied by the fact that the hypothalamus is the integrating center for the autonomic nervous system, which is directly responsible for producing the physiological changes associated with emotional experiences.

Autonomic Nervous System.—The autonomic nervous system consists of three parts, the *cranial*, the *thoracolumbar*, and the *sacral*. The cranial division originates from the base of the brain; the thoracolumbar from the middle portion of the spinal cord at about the level of the chest; and the sacral originates from the tail end of the spinal cord. The cranial and sacral divisions have similar functions and usually are combined into the *craniosacral* system. Although interdependent, the craniosacral and the thoracolumbar systems have antagonistic effects. In general, the function of the thoracolumbar, or *sympathetic*, system is to mobilize the bodily resources for action. It stimulates the flow of adrenin, accelerates the heart, raises the blood pressure, directs the flow of blood from the interior to the periphery, inhibits gastric activity, and increases

the amount of blood sugar available. The mental state associated with thoracolumbar activity is one of diffuse excitement and tension. The craniosacral, or *parasympathetic*, system has just the opposite effect. It tends to store and conserve bodily resources and to neutralize the energizing effects of the thoracolumbar divisions (17).

The contribution of the autonomic system to psychopathology is not definitely established. As the regulator of the internal environment, including the endocrine glands, the circulatory and digestive systems, and the sex organs, it probably exerts a greater influence on psychological adjustment than is generally recognized.

ENVIRONMENTAL AND CULTURAL FACTORS

Cultural Level.—The psychological ills of man are not a product of modern civilization. References pertaining to the symptoms, legal aspects, and treatment of mental defectives, criminals, psychoneurotics, and psychotics are contained in the earliest records of the ancient Egyptians, Greeks, and Romans. From descriptions in the Bible it even appears that the nature of mental symptoms was the same then as now. Nor are psychological deviants found only among civilized peoples. Anthropological studies have shown that even the most primitive people are afflicted with mental deficiency, psychoses, psychoneuroses, and criminality.

Stress and Strain.—In investigating the life histories of psychological deviants, it is often noted that these individuals have been exposed to various emotional traumata such as unhappy or broken homes in childhood, poverty or financial reverses, terrifying situations, disappointing love affairs, loss of position, death of loved ones, and other disturbing experiences.

With regard to the development of abnormality, these unfortunate life situations may be regarded as causal, precipitating, or incidental factors. The universality of disturbing experiences of this type precludes attaching causal significance to them. Almost everyone at some time in his life is exposed to as upsetting or anxiety-producing situations as those experienced by

the overwhelming majority of psychological deviants. On the other hand, such experiences are not merely incidental. They may leave deep, vivid impressions that influence subsequent adjustments.

The remaining alternative is to consider the stresses and strains of life as precipitating factors. When experienced by individuals gifted with strong psychobiological constitutions, they are unattended by serious consequences. They may, however, precipitate abnormal reactions in individuals who are constitutionally predisposed to psychological disorders by their heredity and early developmental history. This does not detract from the importance of emotional disturbances, since the presence or absence of adequate precipitating factors may determine whether latent aberrant tendencies are overtly manifested. This is especially true with respect to the psychoneuroses.

War and Depression.—The most satisfactory test of the etiological importance of distressing emotional experiences is provided by national catastrophes that acutely disturb the lives of millions. There are three recent periods in American history when the general stress and strain of existence bore heavily and fairly consistently on the entire population, namely, the periods of the First and Second World Wars, and the economic depression that began in 1929. How did these affect the incidence of psychological disorders?

Summarizing various investigations, we may conclude that wars produce a decrease in male adult criminality, no increase in psychoses, slight, if any, increase in psychoneuroses among the civilian population, some increase in psychoneuroses among the armed forces, and some increase in juvenile delinquency. Depressions and periods of unemployment produce no detectable increase in psychoses, psychoneuroses, or juvenile delinquency. During such periods, crimes against property tend to increase in number, but other types of crimes show no consistent change. The incidence of mental deficiency is unaffected by either wars or depressions.

Race.—Every race has its quota of psychological deviants. The same clinical varieties of psychological disorders noted among whites are also present among Negroes, Indians, and

Oriental. As yet no studies have been made with respect to the relative incidence of mental abnormalities among whites, Indians, and Orientals. Investigations concerned with a comparison of the Negro and white population in the United States consistently show that a significantly higher proportion of Negroes than of whites are committed to penal institutions, state schools for mental defectives, and mental hospitals for the insane. Probably these figures represent a manifestation of social factors that favor the incarceration of the Negro deviant rather than a basic biological inferiority of the Negro.

Nationality.—The many national groups that constitute the white race all exhibit the same forms of mental abnormalities. There are no grounds for assuming that any national group is innately more susceptible or more immune to psychological diseases than another. Cultural influences within a nation may, however, modify the types of disorders encountered. Crimes of violence, for example, will be more common in countries tolerating feuds and lawlessness, and the incidence of alcoholic psychoses will depend on the alcoholic habits of a given population. Nations that provide adequate facilities for the institutional care of mental defectives will have a greater number of recorded cases than nations that ignore this problem.

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CHAPTER V

INTRODUCTION TO THE PSYCHONEUROSES

Also known as "neuroses," the *psychoneuroses* are minor mental disorders characterized by inner struggles and discordant social relationships. Two essential features of psychoneuroses are that they are precipitated by emotional stresses, conflicts, and frustrations and that they are most effectively treated by psychological techniques. They are not produced by physical disorders and do not respond to routine medical attention. Although often incapacitating and disturbing to the person and his associates, the symptoms of the psychoneurotic are such that compulsory hospitalization or segregation is unnecessary. A few patients voluntarily seek hospital treatment, but the majority live at home and usually continue with their customary business and social activities.

Psychoneurotic symptoms are extremely varied. Some of the more frequent psychological complaints are anxiety, depressed spirits, inability to concentrate or make decisions, memory disturbances, heightened irritability, morbid doubts, obsessions, irrational fears, insomnia, compulsions, and inability to enjoy social relations. Physical symptoms, which are essentially bodily concomitants of strong emotions and conflicts, include loss of voluntary control over certain motor or sensory functions, shortness of breath, persistent tension, fatigue, headaches, gastrointestinal disturbances, palpitation, cardiac irregularities, temperature imbalances, and multiple aches and pains.

Incidence.—Approximately 5 to 10 per cent of the population exhibit psychoneurotic symptoms at any given time. As many as 20 per cent of the people have shown or will show psychoneurotic reactions at critical moments in their lives. Lockhart, quoted by Gillespie (6), states that, in certain industries, 60 per cent of time lost through sickness is due to neurotic illness of some kind. Halliday (8) found that one-third of 1,000 insured

patients who had been incapacitated for a long time, supposedly suffering from organic illness, were in fact ill from neuroses. It has been conservatively estimated by numerous physicians that of the patients who consult general medical practitioners, 25 to 50 per cent suffer from psychoneuroses rather than definite physical ailments.

Classification.—Attempts to organize psychoneurotic reactions into distinct clinical types have not been completely successful. Well-defined symptom patterns that form the basis for division into types are often noted, but many patients have symptoms that fall into two or more clinical groups. The four types of psychoneuroses most generally recognized are *hysteria*, *neurasthenia*, *anxiety state*, and *psychasthenia*.

Hysteria is characterized by a loss of function. Typical hysteria symptoms are psychogenic paralysis of the limbs, deafness, blindness, cutaneous insensitivity, and loss of memory. *Neurasthenia*, as implied by its name, is an exhaustion reaction. Patients suffering from this disorder complain of a lack of energy, diminished power of concentration, irritability, chronic mental and physical fatigue, pressure sensations about the head, gastrointestinal disturbances, and muscular aches and pains. It is important to differentiate *neurasthenia* from *hypochondriasis*. The latter condition is marked by morbid anxiety regarding physical or mental health. The hypochondriac imagines that he has various diseases. He pays careful attention to his bodily functions and is constantly seeking medical relief. Hypochondriacal symptoms may occur in psychoneurotic patients, but they may also be present in psychotic and essentially normal individuals.

Anxiety states are marked by emotional overreaction. Symptoms may include diffuse tension, general apprehension, feelings of insecurity, restlessness, insomnia, palpitation, excessive sweating, dizziness, trembling, upset stomach, and vague fears concerning impending calamity.

Psychasthenia includes *obsessive-compulsive* reactions and *phobias*. The two classes of symptoms have independent origin and are best considered separately. For this reason the term *psychasthenia* is gradually becoming obsolete. *Obsessive-com-*

pulsive symptoms refer to irresistible and persistent urges to do, say, or think about certain things. Uncontrollable impulses to touch objects, repeat words, count steps, and engage in repetitive movements are some illustrations. Phobias are abnormal fears. Unlike normal fears that are appropriate reactions to dangerous situations or objects, phobias are unreasonable or groundless fears. Persons who have an exaggerated fear of germs or who are terrified of harmless things such as open places, closed places, crowds, or chickens are suffering from phobias.

Psychoneuroses occurring under particular situations are often assigned identifying names. Thus psychoneuroses following head injury are referred to as *traumatic neuroses*. Psychoneuroses occurring among military personnel under combat conditions are called *war neuroses*. Psychoneuroses involving impairment of occupational skills, for example writer's cramp, or loss of voice in telephone operators, are classified as *occupational neuroses*.

Wars, occupations, and head injuries do not produce new types of psychoneuroses; they only color the clinical picture. The symptoms exhibited by persons suffering from neuroses precipitated by these factors do not differ markedly from those noted in ordinary psychoneuroses. In all cases, the inherent instability of the individual is the critical factor in the development of psychoneuroses. Head injuries, war stresses, and occupational strains merely serve as precipitating factors releasing latent psychoneurotic tendencies. As such, they are important, for in the absence of such precipitating factors, the latent tendencies might remain unexpressed.

ETIOLOGY OF THE PSYCHONEUROSES

Physical Factors.—Because of the close interdependence of mind and body, it is incorrect to state that physical factors play no role in the development of psychoneuroses. For example, physical exhaustion may so weaken the mental resources of the individual as to facilitate the appearance of neurotic symptoms. However, such instances are rare. Psychoneuroses are psychological disorders. They are not the result of physical diseases

or nerve injuries. In physical health, psychoneurotics do not differ significantly from normal individuals.

This is an important point to emphasize, because many psychoneurotic individuals erroneously think that their symptoms are due to a run-down physical condition produced by overwork or excessive application to studies. Actually, in such cases both overwork and physical debility are best interpreted as indirect manifestations of some underlying personality maladjustment. A person harassed by a distressing psychological problem may seek escape in his work or studies. Should these tension-reducing activities fail, he may develop a psychoneurosis. On the surface it may now appear that overwork caused the neurosis, whereas, in reality, overwork was itself an early symptom. The poor physical health of some psychoneurotics is explicable on a similar basis. The mental turmoil that precedes the onset of symptoms may be accompanied by loss of sleep, poor appetite, and other reactions that unfavorably affect the physical health of the individual.

Trauma and Conflict.—Careful study of the life histories of psychoneurotic patients usually reveals that the onset of symptoms was preceded by some distressing emotional experience or mental conflict. Disappointing love affairs, financial reverses, death in the family, terrifying accidents, intrafamilial discord, and occupational maladjustment are some common examples. Since the symptoms follow the emotional trauma, there is a temptation to regard the trauma as the cause of the psychoneurosis. This is obviously a faulty assumption.

If emotional disturbances and mental conflicts were of themselves capable of producing a psychoneurosis, almost everyone would be a psychoneurotic; for everyone at some time encounters a bitter disappointment or failure, is beset with cares and responsibilities, or faced with a trying decision. Furthermore, there is no evidence that upsetting experiences occur with any greater frequency among the psychoneurotic than among the healthy population. The significant difference is that the more rugged normal individuals take these experiences in their stride, but the potential psychoneurotics are incapable of successfully adapting themselves to the rigors of life.

The cause for the psychoneurosis is to be found in the individual rather than in his life experiences. Emotional traumata and mental conflicts naturally produce temporary instability in many normal persons. They precipitate psychoneurotic reactions that persist for many weeks or months after the disturbing situation only in those individuals who are constitutionally pre-disposed. Inquiry into the past life of those unfavorably affected for long periods generally reveals preexisting psychoneurotic tendencies that were accentuated or released by some distressing experience.

Conditioning.—Several writers, notably Morton Prince (23), have emphasized the importance of *association* or *conditioning* in the etiology of the psychoneuroses. The central idea is that emotions, impulses, and sensations experienced under certain conditions may become so strongly associated that the chance occurrence in the future of some element of the original situation will reinstate the original reaction. Thus a person who suffered from nausea, headaches, and dizziness following a railroad accident may experience the same symptoms for months afterward whenever he rides on a train.

The concept of association has been found particularly useful in explaining absurd fears of the environment and in explaining certain types of war neuroses. Soldiers who have broken under shellfire often become hypersensitive to sounds of all types. Even when safe in a hospital far removed from the front, they become terror-stricken at the sound of an automobile horn or the slam of a door. Conditioning also provides an explanation for certain types of repetitive motor movements, or tics. Such movements may at one time have served some purpose but they now persist as habit residuals.

The limitation of this approach is that it explains the symptoms but not the psychoneurosis. The everyday experiences of most people provide ample material for the formation of all types of pathological associations, but only a small number of individuals, namely, the latent psychoneurotics, habitually react inappropriately to present stimuli because of past associations. Hollingworth (11, p. 362), an ardent supporter of the doctrine of association in psychopathology, has stated this point

very clearly: "To be neurotic is not merely to have established an unserviceable habit adjustment. To be neurotic is above all to be the kind of person who is always forming such unserviceable or unsagacious habits, even under circumstances or in a world where other people form useful ones."

Constitution.—Heredity and early environment and training are the main factors determining constitutional make-up. When unfavorable, they prevent the development of a well-integrated, sturdy personality and thus facilitate the appearance of psychoneurotic reactions when the individual is confronted with some disturbing or intolerable situation.

Heredity.—The transient quality and mildness of psychoneurotic symptoms make hereditary investigations difficult. Studies reported by Gillespie (7) indicate that approximately 20 per cent of the parents of psychoneurotic patients have similar psychoneuroses, and an additional 20 per cent of the parents are unstable or suffer from other forms of neurotic ills or nervous disorders. Psychoneuroses were noted in 51 per cent of the parents of 890 psychoneurotic patients studied by Paskind (20). These data set the limits of heredity. Actually, it is doubtful that heredity is a deciding factor in 40 to 50 per cent of psychoneurotic cases. Since parents and offspring share a common home environment, intrafamilial resemblances with respect to psychoneurotic traits are due partly to hereditary factors and partly to imitation and learning.

Unfavorable Early Environment and Training.—Individuals who in later life become psychoneurotic are often tense, enuretic, fretful, fearful, and anxious as children. The early onset of nervous traits may be interpreted as a manifestation of the same underlying constitutional instability and hypersensitivity that is responsible for the development of the psychoneurosis in later years. However, it is very likely that these childhood maladjustments are often provoked by disturbing and unfavorable influences in the early home life. The more important of these influences are maternal overprotection, rejection, excessive fondling, pathological parental attachments, inconsistent home discipline, strict puritanical upbringing, domestic discord, sibling rivalry, overanxious or domineering parents, broken homes, etc. The

cumulative effect of continued exposure to these disruptive forces is to establish emotional infantilism, distorted values, harmful habits, and impractical attitudes that interfere with the development of a mature, well-balanced personality.

CHARACTERISTICS OF THE PSYCHONEUROTIC

Age.—All ages from childhood to senility are affected, with the highest frequency occurring in the period from the early twenties to the late fifties. The median age of patients under treatment is about forty. It is not uncommon for psychoneurotics to have recurring attacks of fluctuating severity that date from puberty and reappear at irregular intervals throughout the life span, during moments of psychological stress. There is generally a decrease in frequency and severity of attacks with the approach of old age.

Sex.—Approximately 60 per cent of psychoneurotics seeking treatment in clinics, sanatoria, and hospitals are women. The excess of women is mainly due to the fact that about 75 per cent of hysteria patients are women. In other forms, the number of male and female cases is about equal.

Intelligence.—With respect to intelligence, the psychoneurotic group compares very favorably with the general population. Most patients possess average intelligence, and there is some evidence that psychoneuroses are more prevalent among bright than dull individuals. Although all forms of psychoneuroses occur at all intelligence levels, hysteria patients, as a group, are less intelligent than those suffering from other types.

Cultural Status.—The educational and economic status of psychoneurotic patients is comparable with that of the general population. However, cultural status has an important bearing on type of symptoms expressed. Among patients admitted to public mental hospitals, approximately 40 per cent are diagnosed as hysteria, 40 per cent anxiety state or neurasthenia, and 20 per cent psychasthenia (2). The same relative proportions most likely hold for clinic cases. Among wealthier and better educated patients treated in office practice or in private sanatoria, hysteria accounts for less than 15 per cent, with anxiety

state being the outstanding neurosis. This observation is further confirmed by military data. Hysteria is more prevalent among enlisted men than officers, and anxiety symptoms are more common among officers than enlisted men.

Personality.—The varieties of personality types found among the psychoneurotic are probably as numerous as those present in the general population. As a group, however, psychoneurotic individuals exhibit several characteristic traits. They are generally dissatisfied, unhappy individuals who are lacking in self-confidence. Because of their feelings of inadequacy, they hesitate to take chances, recoil from competition, and find it difficult to make decisions and execute plans effectively. For the same reason, they are sensitive to criticism, shun responsibilities, and are inclined to blame others for their mistakes. They are emotionally immature, dependent, and selfish. Although uninterested in the welfare and feelings of others, they want to be well thought of by everybody and expect special considerations. They crave affection, but there is a marked contradiction between their wish for affection and their capacity for feeling or giving it. This discrepancy often results in sexual maladjustment. They are prone to guilt feelings and mental conflicts and find less enjoyment in life than most persons (12)

NATURE OF SYMPTOMS

Psychoneurotic patients are frequently unjustly accused of merely imagining they are ill. True, their symptoms have a psychological origin, but this does not make their suffering any less real or less painful. A simple example will illustrate the nature of psychoneurotic symptoms. When a person becomes excited while making a speech and finds that he is unable to talk or to prevent his knees from shaking or his hands from perspiring, he is experiencing a mild psychoneurotic reaction. The loss of voice, trembling, and perspiration are entirely psychological. As soon as the person sits down, speech returns and physical symptoms disappear. However, anyone who has had this experience realizes that the symptoms are real. The same is true of psychoneurotic symptoms.

The neurasthenic patient who feels tired is tired, and the hysteria patient who complains of a paralysis of the legs is paralyzed. Neither the nervous speaker nor the psychoneurotic deliberately encourages his symptoms. Both are overtaken by them when confronted with a difficult or intolerable situation. The anxiety patient can no more control his trembling than the confused speaker can control his shaking knees. The symptoms, however, are not without purpose. Embarrassing as the loss of voice and the trembling are to the helpless speaker, they put an end to the speechmaking. In fact, they not only terminate his present predicament but they also guard against a possible recurrence by discouraging future attempts at public speaking.

Similarly, the symptoms of the psychoneurotic usually provide a solution to his problems, and for this reason the patient may cling to his symptoms and resist treatment. Loss of memory is an inconvenient neurotic symptom, but as long as it persists, the patient is protected from thinking about the disturbing experience that was initially responsible for the loss of memory. A woman suffering from neurotic aches and pains does not enjoy her symptoms, but they may provide a convenient escape from an intolerable family situation. While ill, she is freed of responsibilities and receives special attention. She may even obtain a long vacation away from home.

The compulsion to count steps and read signs is annoying, but by concentrating on this senseless task the patient perhaps avoids more disagreeable thoughts. The soldier torn between duty and fear finds in a neurosis a solution to his dilemma. If he is unwittingly overtaken by chronic fatigue, a paralysis, or some other psychosomatic disturbance, he will be removed from the battlefield without loss of self-respect.

It is important to remember that the psychoneurotic does not consciously plan an escape through symptoms. He is not a malingerer or faker. To obtain relief, he must sincerely believe in the reality of his protective symptoms. He is not trying to deceive others; he is desperately trying to persuade himself that he is ill. As soon as he realizes the significance of his symptoms, they lose their value and he must again face his difficulties. This point may be illustrated by a simple experiment.

Let us assume that late at night a student starts to read a dull or difficult lesson. Soon he will begin to complain of various symptoms. He is sleepy, his eyes are tired, the print is blurred, and he is unable to understand what he is reading. He accepts these symptoms as genuine and with a clear conscience decides to go to sleep. While preparing for sleep, he picks up an interesting detective story or novel and starts reading. Soon his symptoms vanish, and he may spend the rest of the night reading without discomfort.

Obviously, this student's symptoms were mainly psychological. He did not enjoy studying, but his sense of duty would not permit him to ignore his assignment completely. Without conscious planning on his part, he was rescued from this difficulty by appropriate symptoms that gave him an acceptable excuse for disregarding his lesson. The dynamic process underlying a neurosis follows a similar pattern. The psychoneurotic is not fully aware of the purpose of his symptoms or of the conflict that necessitates the appearance of adjustive symptoms. The whole process may take place at an unconscious level.

PSYCHONEUROSES AND NERVOUSNESS

Nervousness is a popular term that is loosely used to describe a wide variety of reactions. Only a small number of persons classified as "nervous" are suffering from psychoneuroses. Most commonly, the term is applied to individuals who are restless, fidgety, easily upset, and prone to bite their nails or engage in other stereotyped motor acts. The explanation in these cases is that the individual is under tension for some reason and the motor hyperactivity is a means of releasing pent-up energy. In addition, patients suffering from chorea and other neurological diseases that produce muscular twitches, tremors, and poor motor coordination are also often described as nervous.

The term *nervous breakdown* has an even less exact meaning. It may refer to a psychoneurosis, psychosis, neurological disease, physical breakdown, or bored attitude. Individuals so labeled do not have "broken" or "weak" nerves, and their symptoms

are not due to overwork. "Nervous breakdown" is a meaningless and misleading diagnosis that is best avoided.

PSYCHONEUROSES AND PSYCHOSES

It is important to distinguish between the psychoneuroses and the psychoses. They have little in common, each being an independent entity with a different origin and outcome. Psychoneuroses are definitely not early stages of psychoses. Follow-up studies (9, 24, 25) indicate that only 4 to 7 per cent of psychoneurotic patients develop psychoses in later years. Of this number, some were very likely psychotic to begin with but were incorrectly diagnosed because of the relative absence of prominent psychotic symptoms in the incipient stages. In any case, the probability of a neurotic person's becoming psychotic is no greater than for the general population. At some time in their life, 5 to 10 per cent of the general population exhibit pronounced psychotic symptoms. Hereditary investigations also point to an absence of any significant relationship between psychoses and psychoneuroses. The prevalence of psychoses among the parents of 890 psychoneurotic patients studied by Paskind (20) was 5.6 per cent—well within the expectancy for the general population. Only 4 per cent of the parents of the neurotic cases examined by Lewis (18) were psychotic.

Some of the principal points of differentiation between psychoneuroses and psychoses are listed in Table I. Apart from his relatively innocuous and fairly understandable symptoms, the psychoneurotic is indistinguishable from normal individuals. There is no deterioration of personality, intellect, or social habits, and no significant organic pathology. Rapport with the world of reality and the social group is maintained. Speech and thought processes are logical and coherent. Behavior is in conformity with cultural demands and responsive to social pressures. Although the incapacitating symptoms of the psychoneurotic may decrease work efficiency, limit social contacts, and create personal distress, they do not interfere with the general welfare of others or make his presence in society intolerable.

TABLE I. COMPARISON OF PSYCHONEUROSES AND PSYCHOSES

	Psychoneuroses	Psychoses
Etiology	Psychogenic factors and heredity of considerable importance; neurophysical and chemical factors insignificant	Hereditary, toxic, and neurological factors the determining agents; psychogenic factors may or may not be important
General behavior	Speech and thought processes fairly coherent and logical; absence of delusions, hallucinations, and mental confusion	Speech and thought processes incoherent, bizarre, and irrational; mental confusion, delusions, and hallucinations common
Social significance of symptoms	Rapport with reality and social group retained. Behavior in general conformity with accepted standards of society	"Herd sense" and social habits lost; behavior at odds with accepted standards of society
Self-management	Capable of self-management; partially or completely self-supporting; rarely suicidal	Incapable of self-management; often suicidal; compulsory commitment to a mental hospital or equivalent home care essential
Personality	Little or no change from normal self	Radical change; patients look and act like different persons
Insight	Good to fair	Partial or lacking
Treatment procedures	Favorable response to suggestion, reeducation, and other forms of psychological therapy	Symptoms unaffected by psychotherapy; treatment chemical and physiological
Course	Symptoms transitory; outcome usually favorable; no deterioration; mortality rate normal	Symptoms relatively constant from day to day; outcome less favorable in most instances; deterioration common; death rate high

The psychoneurotic is an accepted, usually self-supporting, participating member of his community, free to come and go as he pleases. He has good insight into his condition. He realizes and will readily admit that his actions and ideas are somewhat peculiar. He is sensitive to changes in the external environment.

A stroke of good luck or the removal of a conflict situation will result in an alleviation of his condition. Finally, his symptoms respond favorably to suggestion, reeducation, psychoanalysis, inspirational "pep talks," and other psychological techniques.

The psychotic, on the other hand, is sharply differentiated from the normal individual by the bizarreness of his actions, the incoherency of his speech, the absurdity of his hallucinations and delusions, the inappropriateness of his emotional responses, and his general mental confusion. Toxic and organic factors play an essential role in many of the psychoses. Especially marked is the psychotic's loss of contact with the social group. The psychotic has withdrawn from reality into a private world of his own. Consequently, his behavior and thoughts are unaffected by rules of logic, cultural mores, or outside happenings. A patient who claims he is Napoleon is unconcerned when presented with evidence conclusively proving that he could not possibly be the French emperor.

The bombing of cities during the Second World War provided an excellent illustration of the extent to which psychotic individuals are isolated from the world of reality. Hemphill (10, p. 177) has reported the following description of the behavior of patients in English mental hospitals during air raids:

The chronic wards sleep on through the continuous gunfire, and apart from a few restless cases early in the evening, patients in these wards ignore the whole terrible performance. Just as their psychosis insulates them from the ordinary importances and responsibilities of daily life, so it shuts out and muffles the sound of the guns that come from a world they have left. During the day, when sirens blow, one has an opportunity of observing how unreal and unimportant these sounds seem to be. It is as if they were observing an action taking place which had no greater reality than the action on a screen of a cinema.

This break with reality is one of the more important reasons necessitating compulsory hospitalization of the psychotic; for it not only interferes with adequate self-management but often also leads to behavior that is in conflict with the welfare and best interests of others. A further need for strict supervision results from the fact that the psychotic has little or no apprecia-

tion of his mental condition and generally insists that he is of sound mind. In contrast with this self-appraisal, the members of his family and his associates notice a tremendous change in the patient's personality, judgment, and character. The good-natured, neat, competent, and rational person they formerly knew has changed to a profane, destructive, and unreasonable patient or an apathetic, untidy, incoherent stranger.

An additional point of contrast between the psychoneuroses and psychoses is the more favorable outcome of the former. In certain types of psychoses the prognosis is almost as good as in the psychoneuroses, but in most types the incidence of recovery for psychoses is considerably lower and the death rate is higher.¹¹ Finally, the symptoms of the psychotic exhibit greater day-to-day constancy and do not respond to psychological forms of therapy.

SPECIAL THEORIES OF THE PSYCHONEUROSES

Tension Theory of Janet.—Pierre Janet, a French psychiatrist, has contributed a description of the neuroses based on the concepts of psychological tension, nervous exhaustion, and mental dissociation. His fundamental assumption is that a certain level of psychological tension is essential for the unification and integration of mental phenomena. When this energy level is reduced, mental synthesis is destroyed and the way is prepared for the appearance of lower-order functions in the form of neurotic symptoms. Like defective or rundown storage batteries, neurotic individuals do not possess sufficient energy to function at par. The basic cause for the reduced tension level is poor heredity. Other contributory causes include various exhausting factors that consume the available energy. The more important of these are debilitating physical diseases, excessive fatigue resulting from physical or mental overexertion, and emotional shocks. The lowering of nervous tension produces a corresponding lowering of higher cortical functions, and the nature of the resulting symptoms is determined by whether the energy diminution is general or localized.

Types of Psychoneuroses.—Janet recognized two types of psychoneuroses, hysteria and psychasthenia. When the lowering of nervous energy is localized, only specific functions are affected and the resulting psychoneurosis is hysteria (13). Hysteria is characterized by a narrowing of the field of consciousness and a dropping out of certain functions and systems of ideas. Weakened by the loss of nervous strength, the mind gives up some of its functions. These emancipated functions become dissociated from the central stream of consciousness and lead an autonomous existence. The major symptoms of hysteria include loss or impairment of motor functions (contractures, paralysees, and speech disorders), loss or impairment of sensory functions (anesthesia, deafness, and visual impairment), memory disturbances, and fragmentation of the personality as seen in dual personalities. The functions are not permanently lost; they are only temporarily beyond voluntary control.

To account for the particular choice of symptoms, Janet offers several explanations. The dissociated function may be concerned with the reenacting of some earlier physical injury, real or imagined, or the reliving of some past emotional crisis; it may have been the activity in progress at the moment of intense emotion; it may have been the most complicated and difficult function for the individual, or the weakest and least well developed. Another determining factor is the suggestibility of hysteria patients, which leads them to imitate symptoms they observe in others or recall from personal past illnesses. Physicians not infrequently suggest new symptoms by asking leading questions. In order not to disappoint the doctor, they obligingly develop whatever symptoms they think are expected of them.

All psychoneurotic symptoms not included under hysteria were classified by Janet under the heading of "psychasthenia" (14). This was a broad category that included not only phobias, obsessions, and compulsions, but also the various symptoms which are now regarded as neurasthenic or anxiety reactions. Janet assumed that in these cases there was a diffuse lowering of nervous energy that depressed all mental functions and produced a general disunity of the personality.

Treatment.—According to Janet, the best safeguard against a neurosis is to be born in a family possessing strong and abundant psychic energy. A second and somewhat more practical prophylactic measure is to guide the education and training of predisposed children along sound principles of physical and mental hygiene. Starting early in life they must be taught to avoid introspection and reverie and encouraged to develop social poise and psychological independence. In later years, they must seek a tranquil and easy life where all problems of business, of family, and of love are reduced to a minimum. In this way a person who has received through heredity a very weak mental constitution may avoid a neurosis.

Once the disorder has developed, treatment consists in resynthesizing the personality and restoring the dissociated functions to the main stream of consciousness with the aid of suggestion, moral persuasion, hypnosis, and all other techniques at the disposal of the therapist. A supplementary measure is to build up the patient's supply of energy to prevent subsequent dissociations. The neurotic has a low psychic income and is living beyond his means. He must carefully budget his energy and lead a restricted, restful life, free from exhausting and exciting influences. Through reeducation of the will and emotions, improved outlook on life, and participation in stimulating but non-exhausting activities, he may increase his psychic income. In some instances, energy economies may be effected by liquidating traumatic memories of unassimilated events. These buried, emotionally charged memories tie up huge quantities of energy. When they are liquidated by recall and assimilation, the released energy is made available for other more useful purposes (15, 16).

Evaluation.—Janet was a pioneer in the classification and interpretation of the psychoneuroses. His classical description of hysteria, announced at the beginning of the present century, has survived in almost unaltered form to the present day. Even though his concept of psychasthenia has been greatly modified, he was responsible for introducing this term into modern psychiatry. His writings are rich in suggestions that have formed the starting points for several systems of psychopathology. Both

Freud and Adler, whose theories will be considered in a later chapter, have publicly acknowledged their indebtedness to Janet. The principal criticism that has been directed against his approach to the psychoneuroses is that his system is limited to a description of surface symptoms and ignores the dynamic conflicts that underlie the neuroses.

Pavlov and Experimental Neuroses.—A physiological theory of the neuroses involving an imbalance between excitatory and inhibitory cortical processes was advanced by Pavlov on the basis of conditioning experiments with dogs. Heredity, as manifested by constitution or temperament, is the foundation for neuroses, and a disturbance in equilibrium between excitation and inhibition is the precipitating cause.

Animal Studies.—Pavlov recognized four principal temperaments in dogs. Ranging from the highly excitable to the highly inhibitory type, these are the *choleric*, *sanguine*, *phlegmatic*, and *melancholic*. The classification is the same as that proposed by Hippocrates for man. The two middle or central types—the sanguine or active and the phlegmatic or calm—are stable, well-balanced dogs that have a high constitutional resistance to neuroses. The extreme types, the excitable choleric and the inhibited melancholic, are readily liable to neurotic breakdown in the direction of excessive excitation or inhibition.

In his earlier studies, Pavlov (21) produced *experimental neuroses* in dogs by presenting them with a difficult discrimination problem entailing a clash between excitatory and inhibitory responses. In one experiment, a circle of light was flashed on a screen and food was presented almost simultaneously so that the dog was conditioned to salivate whenever he saw the circle or food signal. When this positive conditioned response was established, an ellipse of light was substituted for the circle; but each time the ellipse was thrown on the screen, food was withheld, so that the dog learned not to salivate at the ellipse. This discrimination was readily made. The experimenter then proceeded to make discrimination more difficult by using a series of ellipses that more and more approached a circle.

The dog succeeded in making the proper discrimination as long

as the axes of the ellipse were as 7 to 8, but when the axes were as 8 to 9, the discrimination proved too fine for the dog and he broke down. All earlier established discriminations—even the easiest ones—were now lost. The dog salivated indiscriminately at the ellipse, circle, experimenter, and apparatus. In addition, he was extremely upset and excited. He tore at the restraining apparatus, barked, whimpered, rejected food, and was unmanageable in general. Attempts to continue with the experiment on subsequent days were unsuccessful. Merely preparing the animal for experimentation reinstated the intense emotional excitement. His usefulness as an experimental animal was ended.

In later studies, Pavlov (22) has demonstrated that experimental neuroses may be produced in dogs not only by a direct collision between excitatory and inhibitory processes but also by overstraining the excitatory or inhibitory capacities of the animal. The excitatory cortical process may be overstrained by substituting excessively strong conditioned stimuli for the usual mild stimuli. For example, a very loud noise may be applied in place of the customary mild sound. Inhibition may be overstrained by prolonging the inhibitory stimuli or increasing the number of inhibitory stimuli in the system of conditioned responses. Equilibrium may also be disturbed by training the dog to respond to stimulus A in an excitatory fashion and to stimulus B in an inhibitory fashion and then reversing the problem so that A becomes the signal for inhibition and B for excitation.

Under any of the above circumstances, easily excitable or choleric dogs tend to become panicky or fall into a state of drowsiness. Weak, inhibited dogs of the melancholic type pass into a hypnotic trance, characterized by rigidity and negativism. Experimental neuroses thus produced are usually permanent, but they may be cured by the administration of bromides and caffeine or by prolonged rest.

Other investigators (3, 4, 5, 19), utilizing difficult tactual, auditory, and visual discrimination problems as well as other conflict situations, have confirmed Pavlov's findings with a variety of animals. The symptoms noted have been uniformly

indicative of fear and nervous agitation. In some cases barking, aggressiveness, and restlessness are the principal reactions; and in other animals inhibition, rigidity, negativism, and sleepiness predominate.

One characteristic that differentiates experimental neurosis from ordinary neurosis is that the abnormal behavior is essentially limited to the experimental situation. Although minor residual and anticipatory symptoms may be present outside the laboratory (1), the animals show acute, easily observable neurotic disturbances only in the specific experimental situation. The writer has had an opportunity to observe two neurotic dogs. While in their living cage, their behavior was not noticeably different from that of other dogs. When handled, they became excited and negativistic, but it was not until they were actually restrained in the laboratory apparatus that they became wildly excited and unmanageable. When removed from the experimental room, their acute symptoms subsided.

Anderson and Liddell (1), Cook (3), and others have pointed out that restraint of activity is essential to the production of experimental neuroses. The animal's activity must be rigidly restricted so that he has but one alternative, to make a simple response such as lifting a leg or to inhibit that response. Difficult situations, for example maze problems that permit freedom of bodily activity or indirect discharge of pent-up excitement, do not give rise to neurotic behavior.

Human Studies.—Experimental neuroses have been produced in children by Krasnogorski and his coworkers (17). In one study, a six-year-old child was trained to respond in a positive way to a metronome beat of 144 beats per minute and to inhibit the response to a slower metronome beat that was gradually increased from 92 to 132 beats. The child successfully discriminated between the positive stimulus and the negative slower stimulus with no signs of abnormality until the latter was increased to 120 beats per minute. Up to this point the child was described as quiet, cooperative, and well balanced. When presented with negative stimulus of 120 beats, he became irritable and taciturn and refused to go to the laboratory. The

discrimination was then made more difficult by increasing the negative stimulus to 132 beats per minute. This resulted in a complete breakdown of discrimination. The negative stimulus now produced yawning and sleepiness.

Evaluation.—As a new and experimental approach to the problem of the neuroses, the Pavlovian theories are interesting and stimulating. However, it is questionable whether the experimentally induced neuroses are directly comparable with the usual forms of human neuroses. The principal difference is that in the ordinary psychoneuroses the symptoms originate from inner strife, whereas the acute symptoms noted in experimental neuroses are essentially learned emotional reactions that are determined by the environment and occur only in the experimental situation. The latter are situational reactions rather than true neuroses.

A second point of contrast is that the clinical pictures observed in the ordinary psychoneuroses are more varied and complex than those present in experimental neuroses. There are, however, some common features. Both types depend on constitutional predisposition. Difficult problems of discrimination that produce experimental neuroses in some animals fail to induce abnormal behavior in more stable animals. The difficult experimental situation serves the same general purpose in the production of experimental neuroses as that served by emotional stress and mental conflict in the ordinary psychoneuroses. It is the necessary catalyst without which there would be no overt symptoms.

SUMMARY

Psychoneuroses are minor psychological disorders that mainly affect individuals who, because of constitutional liabilities, are incapable of effectively coping with difficult life situations. Symptoms, which may be physical or mental, are particularly apt to occur when the potential psychoneurotic is exposed to some disturbing emotional experience or mental conflicts. Symptoms represent indirect or abnormal attempts at adjustment. Although incapacitating and disagreeable to the patient, the

symptoms do not interfere with the welfare of society, so that it is unnecessary to supervise or hospitalize psychoneurotic patients.

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CHAPTER VI

HYSTERIA, ANXIETY STATE, AND NEURASTHENIA

HYSTERIA

Early Conception.—Hysteria is an ancient disease with an interesting history. The name "hysteria" comes from the Greek word meaning uterus, and hysterical symptoms originally were thought to result from disturbances in body functioning produced by the wandering of the uterus about the body. In modified form, this early Greek interpretation has persisted up to recent years. As late as the beginning of the present century, it was generally believed that only women were susceptible to hysteria. It was not until the First World War, when many soldiers developed symptoms typical of hysteria, that this theory was finally disproved. The theory that hysteria is intimately associated with sexual maladjustment is still widely held, especially by psychoanalysts.

Present Conception.—Hysterical reactions are essentially spontaneous, unpremeditated attempts to circumvent or adjust to life difficulties through "flight into incapacity." The loss of function may be physical or psychological. According to Kennedy (8), functional incapacity serves a purpose in chronic cases different from that in recent or new cases. In the early or acute stage, hysteria provides a means of honorable retreat from an anxiety-producing conflict situation, with a minimum loss of contact with everyday life. In chronic or prolonged hysteria, the purpose of the functional incapacity is to achieve a more or less permanent mode of life in which the patient is allowed by his symptoms to adapt himself only to that part of his environment which he wishes to face. This generally involves a lower, more infantile level of adjustment.

Physical Symptoms.—Physical incapacities center about the mimicry of physical diseases and the loss of sensory or motor functions. Some of the more common reactions are as follows:

1. Sensory disability.
 - a. Anesthesias or loss of skin sensitivity to touch, pain, or temperature stimuli. Anesthesias are usually restricted to circumscribed areas, for example the hand, that part of the foot covered by a stocking, or one-half of the body. In location they bear no relation to the known anatomical distribution of nerves.
 - b. Paresthesias or disturbances in sensation, including tingling sensations and hypersensitivity.
 - c. Visual impairment including blurring, acute sensitivity to light, blindness, and other visual peculiarities.
 - d. Auditory disorders ranging from difficulty in hearing certain sounds to complete deafness.
- 2 Motor disability.
 - a. Paralysis of various parts of the body. As in the case of anesthesias, the extent of the paralysis is determined by popular conception of organs rather than the anatomical distribution of nerves. The arms may be paralyzed up to the shoulders, and the legs may be paralyzed from the knees down.
 - b. Astasia-abasia, or inability to stand and walk. An unusual feature of this defect is that the patient is able to move his legs freely when lying in bed or sitting.
 - c. Hyperkinetic movements, including spasms, tremors, and convulsionlike reactions.
 - d. Speech impairment, including aphonia (loss of voice) and stuttering.
3. Other physical disabilities.
 - a. Autonomic disturbances, including excessive sweating, blushing, and skin discoloration.
 - b. Visceral impairment, including vomiting, loss of appetite, diarrhea, and cramps.

Hysterical symptoms differ from similar reactions encountered in the physically ill in that there is no demonstrable impairment of the nervous system or the somatic tissues. Hysterical complaints are patterned after organic injuries, but they are psychologically produced and maintained. In hysterical deafness,

blindness, and anesthesia, the network of nerves going from the sense organs to the brain is intact. Auditory, visual, and pressure impulses are transmitted in normal fashion to the cortex, but for some reason are not registered or attended to, so that the individual is not consciously aware of the incoming sensory stimulation. Similarly, the network of nerves connecting the paralyzed limb with the cortex is intact. Hysteria patients suffering from visceral symptoms are physically healthy.

At first glance, the physical symptoms of hysteria may appear rather baffling. Is it possible for psychological factors to produce sensory-motor disabilities? Are the symptoms real or imaginary? What possible purpose is served by hysterical blindness, deafness, or paralysis?

These questions may be indirectly answered by examining a somewhat similar but more familiar reaction, namely, fainting. Medical students sometimes faint when they witness their first operation. In this case the sight of blood, which is essentially a psychological experience, produces a temporary but real loss of physiological functions. Although spontaneous and unpremeditated, the faint is not without purpose. As a potential doctor, the medical student cannot very well walk out of the room because the scene disturbs him; on the other hand, he cannot stand any more of this particular operation. His dilemma is conveniently solved by fainting, which involuntarily removes him from the scene. Under different circumstances fainting may serve other purposes. Many individuals faint when they receive shocking news. Here the faint is a protective device. By immediately rendering the individual unconscious, it prevents any violent and possibly dangerous emotional reaction and thus softens the blow.

The interpretation of hysterical symptoms follows a similar pattern. When confronted with an intolerable psychological situation, some individuals spontaneously develop physical disabilities that have some protective or escape value. The choice of symptoms is not accidental. Blindness or deafness may serve to protect the patient from disagreeable scenes or verbal reproaches. A paralysis may provide an acceptable alibi for discontinuing a dangerous or disliked job. Frequently, the choice

of symptoms is influenced by previous ailments. A person who years ago suffered from an organic leg injury may later develop an anesthesia of the affected part. But it must not be inferred from the fact that the patient utilizes his symptoms that he is consciously faking them. The underlying mechanism is unconscious. The patient is actually incapacitated, and he honestly believes that his symptoms are real.

There is, however, one peculiar aspect. A person who is incapacitated by an actual physical injury is usually greatly perturbed by his loss of function and eager to obtain treatment. The hysteria patient, on the other hand, is quite unconcerned about his paralysis, deafness, or loss of speech, and unless pressed to do so, he will rarely seek treatment. This attitude of indifference is in keeping with the interpretation of hysteria already outlined. The patient unwittingly derives considerable profit from his symptoms. In addition to eliminating conflicts and providing a socially acceptable means of adjustment to or retreat from his problems, the symptoms encourage sympathy and other secondary gains. Quite understandably, therefore, he does not care to inquire too deeply into his incapacities or to risk their removal through treatment.

Mental Symptoms.—The major mental symptoms of hysteria are concerned with loss of memory and personality dissociation. The most common manifestation is forgetting one's personal identity. This is a form of *amnesia* in which the patient is unable to remember his name, his address, his family associations, and his past personal life. The memory loss, however, is not complete. Vocabulary, social habits, and impersonal memories are retained, so that the individual usually gives a surface impression of normal behavior.

Almost invariably, hysterical amnesias are precipitated by some distressing emotional situation. Unfortunate love affairs, domestic conflicts, and financial reverses are common precipitating agents. Unable to tolerate the pain or shock of some memory, the mind subconsciously seeks an escape through forgetting. The escape is a temporary emergency expedient. After the patient has had a few hours or days to recover from the initial shock, the lost memories return spontaneously. The identity of

amnesic patients can usually be determined through questioning the patient after he has been placed in a drowsy state by hypnosis or a sedative drug. Upon awakening, the patient may still not know who he is, but the material obtained during the drowsy state may aid the patient to remember.

Several examples of hysterical amnesia have been reported by Kanzer (7). One patient, a married woman, asked a policeman to take her home, as she did not know who she was or where she lived. She was taken to a hospital, where under the influence of a sedative drug she told of her marital unhappiness and love for another man. She had finally decided to ask her husband for a divorce and had an appointment to discuss the matter with him. After waiting in vain for two hours for her husband to appear, she wandered off and lost her memory.

Rejected "lost" memories are sometimes sufficiently strong and integrated to lead a fairly independent existence, as witnessed in *somnambulistic*, or sleepwalking, states. While the main personality remains asleep, a dissociated fragment that might be considered a secondary personality takes control and engages in various activities. The secondary personality is neither asleep nor awake. Although not fully conscious, the individual may correctly perform intricate feats during his nocturnal stroll. The patient may even dress appropriately for his act. Ross (11) mentions the case of a *somnambulistic* naval officer who always dressed in full uniform before he left his room and "walked the deck." It is sometimes possible to engage the *somnambulist* in conversation. Upon awakening, there is an amnesia for the sleepwalking episode.

Janet (6) maintains that *somnambulisms* are concerned with the reenactment of vivid emotional experiences that have been split off from the total personality. A second and somewhat similar interpretation is that they are manifestations of repressed memories which are held in check as long as the individual is awake and alert but which come to life when vigilance is relaxed during sleep. Either interpretation is well illustrated by the famous sleepwalking scene from *Macbeth*, in which Lady Macbeth reenacts the murder of the king and makes futile symbolic attempts to wash this bloody stain from her mind.

In rare instances, the desire to escape from an intolerable situation takes a more drastic turn than a simple lapse of memory. In addition to forgetting his identity and past personal life, the patient runs away from home and starts life anew in a distant place. This reaction is called a *fugue*—the French word for flight. (A fugue is a special form of amnesia and as such is subject to the same general laws. Generally precipitated by some stressful emotional experience, it is a literal flight from some personal difficulty)

(A fugue may last a few hours or several months., Isolated episodes have been recorded, but the more general rule is for the wanderings to recur from time to time. When the patient "awakens," he has a complete amnesia for the period from onset of attack to its end and is much surprised to find himself miles away from home, in strange surroundings, with no inkling as to what has happened. The secondary personality in charge of the fugue state is neither familiar with nor interested in the former life of the basic personality. However, he avails himself of the psychological and physical assets of his predecessor, so that his behavior to an onlooker seems normal. He has no difficulty in making necessary purchases, conversing with others, or otherwise conducting himself in proper fashion. During the fugue the patient changes his name. The new life entered upon is usually one at a lower sociointellectual level.

An excellent study of a fugue has been reported by James (5). An itinerant preacher, the Reverend A. Bourne, drew several hundred dollars from a bank in Providence, Rhode Island, and then disappeared. Two months later, a man calling himself A. J. Brown, who had been conducting a small shop in Norristown, Pennsylvania, woke up in a fright and called in the people of the house to tell him where he was. He said he was the Reverend Bourne, that he was entirely ignorant of Norristown, and that the last thing he remembered—it seemed only yesterday—was drawing some money from a bank in Providence. He denied all knowledge of Brown, but under hypnosis the latter personality was easily made to appear. Brown had heard of the Reverend Bourne but was not sure whether he had ever met the man. When confronted with Mrs. Bourne, Brown,

still in a hypnotic trance, stated that he had never seen the woman before. Memory for the Norristown episode was intact. He gave no motive for his wanderings except that there was "trouble back there" and he "wanted rest." The Brown personality appeared to be a rather shrunken and dejected image of the Reverend A. Bourne.

Dual personalities constitute an even more dramatic hysterical reaction. This phenomenon differs from a fugue in that the patient periodically fluctuates from one type of person to another without running away or changing his residence. Since personality anomalies of this type have been observed by only a handful of workers and are no longer seen today, it is most likely that dual personalities never occur spontaneously. In large measure the cases described have been Pygmalions of their discoverers, created out of the suggestibility and play-acting propensities of the hysteric.

Practically all known cases are based on the age-old division of the human personality into two opposing selves, the Good You and the Bad You. This dichotomy of personality, so prevalent in religious themes, fairy-tales, and fiction has been expertly portrayed by Stevenson in his famous story of Dr. Jekyll and Mr. Hyde. The Good You is socially well behaved, restrained, conscientious, and highly moral. The Bad You is impish, amoral, infantile, and selfish. In Freudian terminology, the Good You is dominated and guided by the strait-laced Super-ego; the Bad You is motivated by the uninhibited pleasure principle of the Id.

Normal, as well as hysterical, individuals experience periodic conflicts between their prim, moral, good tendencies and their carefree, amoral, bad temptations. Hysterical individuals, because of their inadequate integration, find it more difficult to unify the warring factions into a harmonious single personality. There are periodic revolts, which with proper psychological handling can be built up into distinct personalities competing for control of the body.

Once established and maintained by autosuggestion or external suggestion, the dual personalities lead fairly autonomous existences, each having a memory system of its own. There is

usually, however, some vague awareness of the co-personality. The transition from one personality to the other may occur following sleep or in the waking state. One personality recedes and is immediately replaced by the other whose actions, speech, and general behavior are often radically different from that of the previous personality. The personality in charge at the moment may deny all knowledge of the other or may ridicule or offer apologies for the conduct of the other.

The "Norma-Polly" case studied by Goddard (3) provides a typical example. This girl had a long history of sleepwalking, general exhaustion, and personal unhappiness dating back to early childhood. The dissociation into two personalities occurred during late adolescence. Norma, the "good" personality, was a well-behaved, restrained, intelligent, polite, somewhat neurotic girl of nineteen. At times she would wake up from a disturbed sleep as Polly, the "bad" personality. This second personality was a willful, impudent, boisterous, and mischievous child who alternated from four to fifteen years in stated age and behavior. Polly's memories and experiences were not directly available to Norma, and, conversely, Polly did not know of Norma's existence until told. According to Goddard, the Polly personality served as an escape from the monotony, drudgery, and responsibilities faced by Norma in her work as a domestic. With the aid of hypnosis and rest, it was eventually found possible to prevent the return of Polly by strengthening the Norma personality.

A few cases, so rare as to be psychological curios, have also been reported in which the personality was split into more than two parts, thereby constituting *multiple personalities*. The underlying mechanism is the same as that for dual personalities. The *Miss Beauchamp* case is the most famous. This young lady, intensively studied over a period of years by Morton Prince (10), exhibited three distinct personalities that spontaneously appeared and disappeared in kaleidoscopic succession. Each expressed individual views, ideals, tastes, and mannerisms; their individual characteristics suggesting, according to Prince, "The Saint," "The Woman," and "The Devil."

The Saint was an idealistic, conscientious, reserved, somewhat sad and neurotic individual. The Woman personified "the frailties of temper, self-concentration, ambition, and self-interest which ordinarily are the dominating factors of the average human being." The Devil, also known as Sally, was not an immoral devil but rather a mischievous imp who was always playing tricks on the other two, such as getting them intoxicated, undoing their knitting, hiding their money, and sending them boxes containing spiders. Sally had an advantage over the other two personalities in that she shared their memories, but they knew about Sally only by inference or secondhand information. With the aid of hypnosis and suggestion, the real Miss Beauchamp was eventually found by merging the Saint and the Woman into a cohesive whole and "squeezing out" Sally, the troublemaker.

Personality of Hysteria Patients.—The simplicity of the underlying mechanisms and the nature of the symptoms suggest that persons who develop hysteria possess many of the characteristics commonly observed in children. They are usually naïve, highly suggestible, egocentric, unstable individuals who crave attention and sympathy. Their emotional reactions, which are often substituted for logical responses, tend to be immature, impulsive, and inconsistent.

When thwarted, hysteria patients may have temper tantrums. Sudden shocks may precipitate uncontrollable, artificial laughter. Toward their associates they frequently display ambivalent love-hate attitudes. Deficient in character and fortitude, they are posers rather than doers. To obtain their ends they will at times resort to pseudo threats of suicide. They have vivid imaginations, and their reactions are more theatrical than sincere. Their unconscious play acting of symptoms gratifies their fondness for the limelight and the dramatic.

Waves of mass hysteria that periodically sweep through a country are largely the result of the suggestibility and latent theatricality of hysterical individuals. Lack of high ideals and proneness for forgetting make it easy for them, through self-deception and functional incapacity, to escape the rigors and

challenges of life. Hysteria for them is not so much a disease as a way of living.

Although mainly observed in persons with limited education and intelligence, hysteria is occasionally encountered among intelligent, well-educated people. According to Ross (11), the presence of hysterical symptoms in the latter group signifies a greater damage to the personality than in the uneducated. For the mentally dull, hysteria is a simple, protective or escape arrangement that is easy to cure. When it occurs in the more intelligent, hysteria represents a last desperate resort, an unconditional surrender, that is extremely difficult to cure.

ILLUSTRATIVE HYSTERIA CASE

A young woman cited as the reason for failure to hand in an essay on the assigned date the excuse that her right arm was paralyzed from the shoulder downward. Indeed, it appeared to hang lifeless by her side, and her request for an extension of time seemed to be a just one. Advised to consult the college physician, she complied and underwent a thorough examination. He reported that there was no apparent reason for the paralysis and, suspecting a mental conflict, urged her to consult her priest. Since she had forsaken her church affiliations upon leaving a convent, she did not carry out his suggestion. After nine weeks she recovered full use of her arm.

Four weeks later she lost her voice and whispered her inability to take part in the class discussions for a time. Again her instructor counseled her to visit the office of the college physician. Finding nothing apparently wrong with her articulatory apparatus, he sent her to a specialist, who made a thorough examination. The specialist professed to her his conviction that there was no physiological reason why she could not talk normally. This diagnosis, given frankly and gruffly by a busy man, incensed the patient, and she vigorously whispered derogatory remarks to him. On her return, she expressed to several people her low opinion of a professional man who could not perceive that there was a real malady in her vocal apparatus. After four weeks the hysterical aphonia disappeared.

She later confided to the writer the mechanisms behind the hysterical symptoms. At the time her right arm was paralyzed, she felt obligated to write home about her secret marriage to another student. Since this news would be upsetting for her parents, she dreaded the

ordeal of acquainting them with the information about her indiscretion. The paralyzed arm was a convenient escape from an unpleasant duty. In retrospect, she was convinced that, at the time, the arm did hang limp by her side, but on analyzing her situation now, she was sure that she had clear insight as to the real cause. The hysterical aphonia she explained as arising from her need to confess to a priest her misdeed. The inhibitions were, however, too great to allow her this relief, and consequently she believed her loss of voice to be attributable to an unconscious repression. Unusually gifted in insight, she was able to give cogent reasons for both of these hysterical paralyses and to show how they were subterfuges to escape from severe mental conflicts. The insight came only after she had announced her marriage and was on the point of leaving college. [Condensed from Harriman (4).]

ANXIETY STATE

Symptoms.—Anxiety reaction is the most common form of psychoneurosis occurring among individuals possessing above average intelligence. It has been defined by Ross (11, p. 31) as "a series of symptoms, which arise from faulty adaptations to the stresses and strains of life. It is caused by overaction in an attempt to meet these difficulties."

✓Symptoms are the concomitants of positive emotional reaction. Diffuse anxiety, the key symptom, may be expressed by apprehension, gloomy forebodings, fear of dying, feelings of insecurity, and general excitement. Fatigue, insomnia, gastrointestinal disturbances, and depression of spirits are noted in the majority of patients. From 25 to 50 per cent of patients studied by Coon and Raymond (2) exhibited cardiac disorders, emotional instability, inferiority feelings, pains, and headaches. Indecision, intolerance, suicidal preoccupation, panic states, subjective thought disturbances, strange fears, giddiness, and genitourinary symptoms were noted in more than 10 per cent of cases. A large number of anxiety patients complain of a general loss of interest and an inability to concentrate or think. Symptoms exhibit considerable daily fluctuation in severity. The usual rule is for mild chronic states of anxiety to be punctuated by transient acute attacks lasting from a few seconds to an

hour. Frequency of acute attacks varies with the individual. Some have them daily, others experience them considerably less often. Between attacks, many patients are relatively free of symptoms.

Interpretation.—To understand the symptoms of the anxiety patient, one has only to examine the reactions of normal individuals to distressing or insurmountable life situations. The student uncertain of his ability to pass an examination, and the individual working at a job beyond his abilities, present anxiety reactions in miniature. They are tense and apprehensive. They cannot marshal their thoughts or concentrate their attention. Fleeting fears of impending doom and disgrace plague them. On the physical side there are the usual symptoms that accompany intense emotional disturbances. They feel limp and exhausted, break forth in a cold sweat, hear their hearts pounding, are overcome with a sense of suffocation, and are acutely aware of all forms of abdominal discomfort.

There are, however, certain crucial points of distinction between the anxiety of the normal and the neurotic. The normal individual realizes the cause of his anxiety and soon gets over it. The anxiety patient is usually only dimly aware of the true nature of the conflicts, frustrations, and difficulties that beset him, and his symptoms persist over long periods. This is due to the fact that the source of normal anxiety is to be found primarily in some specific external danger or thwarting situation, whereas the more exacerbating anxiety of the neurotic arises from inner dangers and frustrations.

Frequently, the source of the neurotic's anxiety is traceable to some disturbing childhood experience. Symptoms originally arising from such an experience may reappear years later when the individual is exposed to a neutral situation that contains some element in common with the original disturbing experience. The incidental common element may reinstate the whole emotional reaction without recalling to mind the original cause, so that the individual is at a loss to explain his symptoms.

An interesting subdivision of anxiety patients on the basis of similarity in dynamic patterns has been reported by Coon and Raymond (2). Their clinical material was obtained from a

private sanatorium, specializing in the treatment of psychoneurotic patients of above average socioeconomic status. Three main groups were noted.

1. Overambitious, conscientious, dynamic, energetic persons who drive on at fever pitch toward well-defined, often quite material goals. They habitually meet even the slightest threat of failure by frantic redoubling of effort. Their programs of daily living become increasingly ill balanced, they know little play or recreation, and in the face of mounting stress, they develop great anxiety and distressing bodily and mental symptoms. Early insecurity is often noted in their lives, and basic feelings of inferiority and inordinate fear of failure are frequent. Most of these neuroses become manifest in the later part of middle life, usually in response to rather definite threats to the consummation of ambitious goals.

2. A rather broad grouping of essentially immature, overdependent, insecure, impractical people (some with comparatively modest intellectual endowment) who are ill equipped to meet the ordinary tests of life. Many of them have had frequent illnesses in childhood and have been overprotected by parents who unduly emphasized sickness. Habit tendencies to develop physical symptoms in stressful situations are frequently noted.

Various combinations of factors play a role in crippling the lives of the people in this category. It is felt, however, that the most vivid and fundamental motif which runs through these patients' history is a persistent inability to progress gracefully from the dependence and egocentricity of youth to adult responsibilities. These patients are early imbued with the conviction that they are precious and delicate creatures. They soon learn to use their seeming frailty for purposes of exploitation, thus establishing the neurotic pattern of getting attention and saving face through illness.

3. A group of dependent, emotionally immature married women, mostly of middle age, who were pampered and spoiled in childhood but are now deprived of solicitude and affection by rather unsympathetic, undemonstrative, exacting, often more sophisticated husbands who cause them to feel markedly lonely, insecure, inferior, and unimportant. These women have often

exhibited delicate health in youth. They now react to their unhappy domestic situation by developing fatigue, irritability, depressed spirits, and chronic invalidism—reactions which, as a rule, augment their husbands' impatience and criticism. A few of the women of this group demand an inordinate amount of sympathy and attention, not as a result of early pampering and adulation but rather because of a keenly felt affectional deprivation in childhood.

ILLUSTRATIVE ANXIETY CASES

Three months before graduation, a college senior developed a persistent cold that necessitated his staying home for three weeks. On his first day out, he started to take a short walk but suddenly felt so exhausted that he returned to bed. The following morning, while having breakfast in bed, he became aware of a palpitation of the heart. Since he was lying perfectly still, he became alarmed at this and thought the end was near. The family doctor was called and administered a sedative. Later the physician assured the patient that his heart was sound and informed him that the cardiac disturbance had been set off by some gastric upset. Two days later, while eating, the patient had a recurrence of palpitation and intense fear of death. On this occasion his abdomen felt tense. He noted bubbling sensations in the stomach and little twitchings under the skin. This started a long series of medical examinations, laboratory tests, and rest cures that were all without avail.

Three weeks before the end of the semester, he sought psychological assistance. Examination of his future plans revealed a strong resistance to entering his father's business upon graduation. There was also a history of previous attacks of a milder intensity that were associated with earlier social and sexual adjustments. The patient was informed of the role of emotional disturbances in producing physical symptoms, and a plan was suggested for solving his vocational conflict. This resulted in a considerable improvement, followed by a relapse in a few days. The relapse started the patient on another round of medical examinations that confirmed previous findings to the effect that his physical health was good. He was advised by several physicians to forget his symptoms and he would be well. Being unable to follow this advice, he again sought psychological assistance. Treatment centered about the point that he must choose between a life of

chronic invalidism or a normal healthy existence. He was told that choice of occupation was a decision he must make. If he felt he would be unhappy working for his father, there was no reason why he shouldn't seek other employment. The patient reluctantly agreed that it was all up to him and in a few days returned to report that he was completely well. When last seen, three months later, he was still in excellent health.

A conscientious, hard-working middle-aged man with great responsibility and business worry led an imbalanced life of all work in the hope of enjoying himself at some vague future time. In the face of business difficulty, he became more and more tense and exerted himself beyond all reason. Anxiety symptoms were misinterpreted by him as a fatal heart disease such as had killed his father in the prime of life, and he grew panicky. A nasal operation, influenza, and a trying domestic situation were further contributing factors in his neurosis, in which fear of death, palpitation, and anxiety were prominent. He was apparently helped greatly by reeducation and reassurance; he lives a more balanced life and has reconstructed his ideals somewhat. [Condensed from Coon and Raymond (2, p. 37).]

During her first-semester examination period, a freshman visited the psychological clinic because of extreme tension. She was jittery, wept easily, and complained of insomnia, nausea, loss of appetite, and fainting. She was convinced that she had failed the examinations she had taken and would be unable to take the remaining ones. Although she had been studying 15 hours a day for the past three weeks, she found that as soon as she read her examination questions, her mind went completely blank.

She had entered college with the idea of becoming a famous physician. In high school she had obtained excellent grades and had always regarded herself as a brilliant student. Now she had lost all confidence in herself and thought that she must be losing her mind. Because of her poor college marks, she felt that she had disgraced herself and disappointed her parents who had been very proud of her. The explanation for her anxiety lay in the discrepancy between her high aspirations, fostered by earlier successes, and her mediocre ability. Her greatest ambition was to be at the head of her class, but she possessed only average intelligence as compared with the college

level. Treatment consisted of assisting her to obtain insight into her problem and persuading her to accept a more modest goal.

Interview with a timid forty-year-old clerk who for several years has been unable to hold a position because of recurring anxiety attacks:

What has been your trouble?

"For the past two years I have been so nervous and jittery. I just can't seem to eat, sleep, and I know I am getting worse."

When do these symptoms become evident?

"It bothers me most when I have to make decisions or meet strangers. I become extremely nervous, my heart beats violently, and I frequently break forth in a cold sweat."

Can you describe your symptoms in greater detail?

"Yes. I have had it so often that it has entirely replaced my normal reaction. I lose all control of myself and sometimes I shake like a leaf. When I get in such a state, I find it difficult to breathe and feel as though I was going to choke to death. This feeling that something terrible is about to happen keeps me awake most of the night. I don't know why I should react like that."

What have you done to control it?

"I have been to numerous physicians and clinics but there doesn't seem to be anything that can be done for me. It just comes over me and there is nothing I can do about it."

NEURASTHENIA

Definition.—The symptoms of the neurasthenic, like those of the anxiety patient, result from emotional overreaction to baffling personal problems. They represent ineffectual struggles against frustrations and difficulties. The two disorders are so similar in etiology and symptomatology that many modern psychiatrists prefer to classify both disorders under the general heading of anxiety reactions. There are, however, some advantages in retaining the diagnosis of neurasthenia as a separate entity. The dominant feature of neurasthenia is one of continuous exhaus-

tion. Beard (1), an early American psychiatrist who originally coined the term, attributed the disease to a general weakening of the nerve cells produced by overwork. This interpretation has been discarded and supplanted by a psychological one that regards the exhaustion of the neurasthenic as a by-product of persistent nonadjustive emotional reactions. It is not overwork but prolonged emotional tension that is the precipitating cause.

Symptoms.—Almost all neurasthenic patients complain of undue fatigability. They are tired from the moment they arise in the morning until they retire at night. Their weary limbs refuse to function, and the slightest tasks assume gigantic proportions. The fatigability also extends to their mental life. They feel dull and depressed, are devoid of interest, and experience great difficulty in thinking.

The fatigue of the neurasthenic differs in several respects from normal fatigue. To begin with, it is not the result of actual overexertion. There is nothing in the work history of these patients to warrant the severity of their symptoms. The fatigue is essentially a psychological phenomenon. As such, it is not influenced by rest. Months of idleness fail to restore normal physical and mental vigor. Furthermore, the fatigue is selective. The patient is completely worn out by a five-minute business interview, but he experiences no difficulty in discussing his symptoms by the hour. Housework is extremely tiring, but a strenuous evening of dancing is stimulating. This peculiarity is of course not limited to neurasthenics. Normal people also find work more exhausting than vigorous sports, and it is usually the most distasteful duties that prove the most fatiguing.

A second characteristic of neurasthenia is the presence of somatic symptoms. Binding sensations about the neck, head, and shoulders are fairly common. The muscles of the neck may seem to be tied in knots, and the top of the head may feel as if it were encircled by a tight ring. Many patients complain of gastrointestinal disturbances, backaches, headaches, and diffuse pains. Meals are sometimes prolonged for hours because of poor appetite and difficulty in swallowing. Sleep is often disturbed. During the night, the patient is unable to go to

sleep, and during the day, he finds it difficult to stay awake. Apathy and irritability are the prevailing moods.

Unlike hysteria patients who are inclined to ignore their physical symptoms, neurasthenics are acutely aware of their ailments. They describe them in great detail to all listeners and are constantly seeking treatment. They often go the rounds from clinic to clinic, from physician to faith healer to dispensers of patent medicines, in their unceasing quest for some magical remedy that will miraculously cure them of their ailments. Each new remedy brings about some temporary improvement; then there is a relapse, followed by a change in treatment. Since they generally look healthy, the disparity between their exaggerated symptoms and their apparent good physical health has earned for this group of patients such epithets as "enjoyers of poor health" and "clinic shoppers."

As a group, neurasthenics tend to have negative personalities. They frequently annoy friends and doctors by their constant complaints, complete selfishness, morose outlook, and apparent unwillingness to help themselves to a fuller enjoyment of life. When they consult a physician, they expect him to assume full responsibility for their health, happiness, and success. As reported by Weiss and English (12, p. 552), neurasthenics seem to say, "There's my story, doctor" (after taking plenty of time to tell it in detail). "Now you pat me and rub me and feed me medicine and take my pains away and give me a good appetite and an easy bowel movement and a good night's sleep, and give me inspiration and happiness and tell me how to be successful. And while you are about it, get my mother-in-law out of the house and I'll pay you when I get a job."

Interpretation.—The exhausting nature of continued emotional tension provides an adequate explanation for the initial appearance of symptoms. Normal individuals frequently exhibit similar reactions when under strain. What differentiates the neurasthenic from the normal is the persistence of his symptoms. They may last for months or years and in severe cases result in chronic psychological invalidism. Although at first the after-effects of a difficult emotional situation, the symptoms continue because they are of value to the patient. As long

as he believes and is able to persuade others that he is genuinely sick, the neurasthenic is in a favorable position to exploit his symptoms for personal gain. His well-advertised ailments secure for him the attention of his family and the sympathy of friends. Because he is sick, he is excused from competition and freed of responsibilities. In those cases where the emotional irritant is a member of the family, the incapacitating symptoms and the medical expenses may even serve as subtle methods of punishing the offending party.

ILLUSTRATIVE NEURASTHENIA CASES

A student, referred to the psychological clinic for failing work, complained of extreme lassitude, fatigability, vertigo, and depression. He was unable to sleep at night and had no appetite. He stated that he was allergic to all acid-containing foods. He had lost interest in his work and wanted to leave college, but his family objected. Examination of his past life revealed a poor home adjustment. He was very attached to his mother but quarreled constantly with his siblings and stepfather. For many years he made a practice of escaping from difficulties through illness. During the past four years his personal medical bills had totaled more than \$1,000.

"Ever since I have been married, I've been nervous. If I didn't have the finest husband in the world and one who takes most wonderful care of me and puts up with all my complaining and all my sickness, I'd be a grass widow. The average man just couldn't stand it. I haven't been a wife to him at all. I've been too sick. First there was that awful headache. Oh, I can't tell you how terrible it was. It just knocked me down and I thought the end of the world had come. It never really has gone away in all these eight years, but it's nothing like it used to be. But there's been a lot of other things. There's a sort of an internal trembling, you know, a kind of inward nervousness and I just feel as though all my organs are quivering. One doctor told me my nerves were tied in knots.

"I don't know why it is but I can't stand anything. I haven't strength enough to walk from here to the streetcar and back. I may get up in the morning feeling pretty good, but by the time I get breakfast for my husband and have started in on my morning's work,

I'm nearly exhausted and by noon I'm just completely played out. I guess I told you about my sweating and getting so hot and then so cold. Did I tell you about that funny twisting feeling? It runs right through my right side down into my leg. Once I noticed it came clear up to the top of my spine. I think it's a nerve loose or something like that. None of the doctors know what to make of my case. I've been to dozens of them. Yes, and I've tried osteopaths and chiropractors. I even went to the new psychology school and I don't know what else. Some say I ought to try Christian Science, but you can't tell me these things are imaginary, and they are not in my mind either. I admit I'm nervous but there's a cause for these things somewhere. I know I never had 'em before I was married." [Condensed from Menninger (9, p. 124).]

A thirty-eight-year-old widow, the mother of two sons, is chronically tired and ailing. Her symptoms cover a wide range: flushed or cold skin, heart palpitations, dizzy spells, inability to sleep, breathing difficulties, chest cramps, inability to digest food, headaches, and pressures about the upper part of the body. In addition, she is usually depressed and apprehensive. She worries continually about finances, her poor health, her sons, and everything else. Whenever the phone rings, she is convinced that something terrible has happened. She is extremely sensitive and attaches personal significance to casual remarks. She complains of an inability to remember things. At times she will force herself to do some housework and then spends days describing how terrible she felt while doing it.

A pattern of overreaction to disagreeable experiences runs through her life history. The death of her mother when the patient was ten resulted in a "nervous breakdown." She married when eighteen and had two children by the time she was twenty-two. Shortly after the birth of her second son, she suffered from a stomach ailment, but an exploratory operation failed to reveal any physical abnormality. When she was thirty, her husband entered upon a business venture to which she was greatly opposed. This involved a much greater burden of work on both husband and wife and finally resulted in the loss of a considerable sum of money.

It was at this time that her symptoms started in earnest. She periodically had severe attacks that prevented her working either at home or at the office. When she was thirty-three, her husband died. The shock of his death made her ill for several weeks so that it was

necessary to have a sister come to live with the family. For a time the presence of the sister had a favorable effect on the patient; then they quarreled and the sister moved out. Since the patient was unable to get along with her employees, the business was sold. This also resulted in a temporary improvement, but soon the patient began to quarrel with her sons over minor issues and force them to listen to an endless recital of her symptoms. The sons reacted by staying away from home as much as possible.

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CHAPTER VII

OTHER FORMS OF PSYCHONEUROSES

OBSESSIVE-COMPULSIVE STATES

Obsessions are spontaneously recurring ideas and thoughts over which the individual has no voluntary control. He is forced to tolerate their presence and domination of his consciousness even though they are disturbing to his mental peace. Usually, obsessions are concerned with unanswerable questions pertaining to the existence of God and the meaning of truth, or morbid doubts concerning the correctness of one's past actions and the true identity of one's parents. Some patients suffer from an intense urge to touch objects or persons or to say certain words. A particularly excruciating symptom commonly observed by the clergy is *scrupulosity*, a condition characterized by tormenting doubts concerning the possible commission of some unforgivable sin. Confessions are excessively frequent but totally unsatisfying.

Compulsions are irresistible impulses to perform certain acts of a repetitive ritualistic nature, such as hand washing, money counting, shoulder shrugging, facial tics, dusting, and sign reading. Obsessions and compulsions are often inseparable. Obsessive ideas frequently lead to compulsive acts, and compulsions are based on insistent mental ideas. /

Comparison with Normal Reactions.—These reactions are especially disturbing and painful because the patient fully realizes the absurdity and senselessness of the symptoms but is powerless to combat them or to inhibit them adequately. Much as he would like to, try as he will, he cannot free his mind of the ever-present obsessive thoughts or successfully resist surrendering to his compulsions. His whole life is dominated and restricted by his symptoms. It is essentially this incapacitating quality that differentiates psychoneurotic from normal obsessions and compulsions.

Many healthy individuals suffer from mild doubts and indecisions. After they have carefully locked the doors and gotten into bed, they begin to wonder whether they have really checked all the doors. The doubts become so disturbing that sleep is impossible until the doors have been rechecked. Finding everything under control, the normal person peacefully falls asleep. The obsessive patient, seized with a similar doubt, must check the doors 50 times each night until he falls asleep from sheer exhaustion. There is no appeasing his doubts, because the checking of the doors is merely an external manifestation of some deeper unsolved conflict.

Obsessions and compulsions occupy the total attention and effort of the patient, with the consequence that work efficiency and personal adjustment are seriously impaired. As long as the patient fights against the impulse to wash his hands or to touch certain objects, he is tense and anxious. Relief obtained from yielding to his impulses is temporary. A few minutes later the desire is as strong and urgent as ever. Because of the repetitive nature of his symptoms, there is no time or energy left for other duties. The housewife obsessed with a cleaning mania must dust each piece of furniture hundreds of times a day to the neglect of all other tasks. The clerk who is compelled to add each column of figures 33 times before his conscience will permit him to go on to the next task is soon unemployed. The college student who must do her hair five times each morning and then spend two hours deciding which dress to wear must either get up at the crack of dawn or cut all her morning classes.

Another point of contrast between normal and psychasthenic obsessive-compulsive behavior is that in a small percentage of instances the latter is asocial and harmful. Irresistible impulses to steal or to set fires, known as *kleptomania* and *pyromania*, respectively, frequently lead to legal entanglements. In cases of this type, the individual does not profit from his acts. He steals and sets fires to relieve some inner urge. The stolen objects are usually neither used nor sold, and the houses burned belong to total strangers, so that there is no thought of revenge or personal gain.

Etiology.—The causes of obsessions and compulsions are many and complex. To begin with, persons who develop these symptoms are a select group. Usually there is a strong history of nervousness in the immediate family. In a study of 100 parents of obsessive patients, Lewis (12) found that only 18 could be regarded as normal. <This hereditary predisposition is further aggravated by parental strictness and poor guidance. The home atmosphere of children who later become compulsives is unfriendly and austere. An undue emphasis is placed on neatness, cleanliness, duty, punctuality, and perfection.>

Janet (10, p. 751) has given an interesting description of the development of compulsions in a young girl, aided and abetted by her overscrupulous parents.

If she was afraid that some object had been soiled, it would be washed in front of her as she wished. If she fancied that she was harboring dangerous microbes, whatever antiseptic practice she demanded would be carried out. When she believed herself to be contaminated and dangerous, other members of her family avoided touching her; they would only go to her when they were wearing aseptic blouses and amid fumigations. In a word, all the symptoms of the disease were sedulously fostered. After 10 years of this sort of education, the patient was afflicted with the most typical psychasthenic delusions that can possibly be imagined. She spent most of the day in a bathroom, having all parts of the body washed by two women whose whole business it was to drench her with antiseptics. At night she would have herself tied firmly down in the bed with cords which made deep furrows in her skin, this being done to prevent her from walking in her sleep and committing nameless crimes. One concession after another had ended by developing the disease to an almost incredible degree.

Personality.—In personality structure, compulsive patients are introverted, sensitive, socially awkward individuals of good intelligence who compensate for their inability to make decisions and their feelings of insecurity by being extremely meticulous, punctilious, overconscientious, and orderly. They are precise individuals who make a habit of perfection. Time and money are carefully budgeted, meals are served precisely on time, bills are paid when due, and every piece of furniture has

its special place. Everything in their lives is just so. Not content with regimenting their own lives, many impose their rigid rules upon members of their households and employees. Their puritanical standards and high ideals deprive them of the capacity to enjoy life and people. Intolerant of human foibles and devoid of humor, they find it difficult to establish friendly relations with other people.

Interpretation.—Obsessive-compulsive symptoms are best interpreted as protective devices designed to absorb and neutralize the anxiety created by inner conflicts. Hidden wishes and feelings of hostility may in some instances be offset by compulsive fears. Thus a desire to yield to illicit sexual temptations may be held in check by an obsessive fear of dirt or disease. An intense hatred for a person may be compensated for by an equally intense fear lest one kill him. This fear, in turn, may lead to a compulsion to avoid touching knives. The anxiety associated with some repressed conflict is sometimes released by displacing it upon some neutral object. In this way an emotional outlet is provided without revealing to the person the actual source of his conflict. For example, anxiety generated by inadequately repressed immoral impulses may be expressed by anxiety concerning physical cleanliness, resulting in compulsive handwashing. A fear of high places may represent a displaced fear of suicide, and a dread of guns may signify a repressed desire to kill someone.

Some obsessive-compulsive reactions may be more simply interpreted as substitute activities. The mind can be occupied with only one task at a time. If a person is kept constantly busy counting steps, touching objects twenty times, or repeating meaningless words, he has less opportunity to be troubled by more distressing thoughts. In addition to protecting the mind against the intrusion of painful memories and ideas, the substitute activities are, by their repetitive nature, an economy measure in that they eliminate the necessity of constantly seeking new distractions.

The ritualistic, repetitive nature of obsessive-compulsive reactions is also highly suggestive of primitive thinking and belief in magic. It is as if the patient, through a strict adherence to a

ceremonial routine, were trying to influence the supernatural powers to intervene in his behalf. In some cases this implicit faith in the power of magic is associated with past experiences. The compulsive ritual may, for example, be the reenactment of some pattern of action which, when previously performed, led to a favorable outcome. Since it worked once, might it not work again?

An element of retribution and expiation that implies strong guilt feelings for past misdeeds is often discernible. The patient is genuinely distressed and embarrassed by the necessity of surrendering to obsessions and compulsions that he realizes are absurd, and he goes to great pains to conceal his symptoms from the world. The punishment motif is sometimes apparent in kleptomania when the theft is performed so carelessly as to invite detection and punishment.

EXAMPLES OF OBSESSIVE-COMPULSIVE NEUROSES

A successful businessman of fifty developed an overpowering fear of sudden death. This was especially marked at night when he had more time on his hands. The patient dreaded the thought of going to bed lest something terrible happen during the night. He also exhibited many obsessions and compulsions. When undressing, he had to arrange his clothes in a definite manner. He felt that the number 3 was unlucky for him, so he carefully avoided touching objects three times by making it a point to touch them 18 times. His apprehensions about burglars and sounds in the house forced him to check and recheck the doors and windows many times during the night. The explanation and purpose of his ritualistic symptoms were brought out by psychiatric examination. The patient had recently been rejected for life insurance because of high blood pressure. This led to the fear that he might meet with sudden death. The elaborate ritual about clothes, burglars, and the number 3 served as distractions, keeping him fully occupied so that his thoughts would not dwell on his poor health and impending death. [Condensed from Bagby (2, p. 209).]

A forty-nine-year-old man of lofty ideals and ultrarefined tastes, who disliked coarseness of any kind, was obsessed by the number 13.

If he heard the word, he felt a shock, followed by a period of misery. He stayed in bed on the thirteenth day of the month and on the twenty-seventh, because the word "twenty-seventh" has 13 letters. Everybody seemed to be saying 13 at him in some way or another; thus they would say, "Oh, good morning," and with, as it seemed to him, a most perverse ingenuity, they would later in the day say only, "Good afternoon." He worked near Oxford Circus, and lost time by not going through it because the words "Peter Robinson" were displayed prominently. On going upstairs he would hop over the thirteenth step. Wherever he went, whatever he did, he was compelled to count the letters in the short phrases people used, to count the words in their sentences, to count his steps, the number of streets he passed, and so on.

He gave so much time to the avoidance of the number that he became totally unfit to do anything else, and his condition was truly one of misery. The genesis of his obsession was traceable to a youthful experience. As a boy, he had lived with a grandmother who kept a maid. This girl was quite superstitious about bad luck attending the number 13 and had impressed this superstition on him. Following a two-year intimacy with this girl, he was sent to a boarding school. Here he came under strong religious influence, which led to the repression of earlier sex experiences. This repression was so complete that he consciously recalled them for the first time while undergoing treatment. The obsession concerning the number 13 represented a conflict between his high moral and esthetic ideals and his baser temptations. Treatment consisted in explaining the origin of the conflict and attempting to persuade the patient to assume a more humble and tolerant attitude toward himself and others. However, as frequently happens in cases of this type, the patient was unable to reorient his pattern of life, with the consequence that the outcome was unfavorable. [Condensed from Ross (17, pp. 219-223).]

An emaciated girl of fourteen was sent to us for study by a competent physician who had found no ailment accounting for her malnutrition. He stated that she evidently was a case of self-starvation. He also called attention to her very peculiar ways of holding and managing her hands. I soon found that the main features of her personality history were those of extreme goodness and religiously tinged devotion to her mother. In her prayers she thanked God for the possession of such a mother and begged that her mother might

be spared for many years to come. At ten years, when she was having crying spells of unknown origin, she wrote verses ending in such fashion as the following: "Lord, have me always think my mother good and love her well, as all nice children should."

In the course of our psychiatric interviews, it became clear that this girl was very much afraid of what her hands might involuntarily do. She held them in peculiar ways, she sat on them in the theatre, and she tried to avoid the use of a knife at the table. She felt that she might hurt somebody. Sometimes when she touched her neckband she thought of how some person might be strangled. Her guilt sense about all this was so great that she felt she ought to be punished; and since no one knew of anything for which she should be punished, she undertook to inflict self-punishment by eating just as little as possible.

Only very gradually it came out that for years she had had a deep sense of disapproval of her mother, whom she really regarded as entirely selfish. Largely under the influence of a very religious grandmother, she struggled hard to overcome any unfilial thoughts and gave herself credit for having repressed them. But then there began to appear little phantasies of someone being injured by her. She never translated these consciously into any conceptions of hurting or strangling her mother. When, in the interviews, the sequence of mental events became rather obvious, the girl at first strongly expressed her hostility toward her mother and then became so afraid of her revelations that she retreated again behind her façade of mother devotion.

When the mother was made acquainted with the true state of affairs, she in turn acknowledged her own previous and continuing inclinations toward self-enjoyment, attitudes that she did not in the least intend to alter, and asserted unequivocally that the girl was perfectly free to express her hostilities without fear of condemnation. This cleared the atmosphere wonderfully, and the girl began to allow herself occasionally to explode in vigorous statements of hatred for her mother and her ways, and concomitantly she began to gain weight and to manage her hands in quite normal fashion. [Condensed from Healy (7, pp. 95-96).]

PHOBIAS

Phobias are peculiar fears that the patient realizes are absurd but is unable to explain or overcome. Many of the more com-

mon fears of the environment have been given impressive but nonenlightening Greek names, as for example,

<i>Acrophobia.</i> Fear of high places.	<i>Nyctophobia.</i> Fear of darkness.
<i>Agoraphobia.</i> Fear of open places.	<i>Ochlophobia.</i> Fear of crowds.
<i>Claustrophobia.</i> Fear of closed places.	<i>Zoophobia.</i> Fear of animals or of a particular animal.

With persons who are otherwise relatively free of symptoms, these are usually learned fears based on early childhood experiences involving the feared object. Whether they should be regarded as normal or neurotic depends primarily on the degree to which they incapacitate or distress the individual and on the extent to which he understands the origin and significance of the fear. Normal fear of water, closed places, harmless animals, elevators, and other innocuous objects is easily established by simple conditioning. An individual trapped between floors in a darkened elevator for several hours or almost drowned while swimming may, because of past unfortunate associations, fear and avoid riding in any elevator or swimming in the shallowest water. A college student may become slightly nauseated whenever she sees a cat because she was badly scratched by a kitten placed on her shoulder when playing blindman's buff as a child. An athlete afraid of moths and other insects traced his fear to a terrifying experience of having a moth enter the ear passage and beat against the eardrum until the insect was removed by syringing. Such simple, direct, and understandable fears, where the person affected is fully aware of the source of his peculiar fear and is not greatly inconvenienced by it, are not to be classed as neuroses.

Patients suffering from neurotic phobias are not aware of the basis of their fears, their reactions to them are often violent, and they are greatly inconvenienced by them. If they knew and understood the original cause, their fears would be less intense or would disappear completely. As is pointed out by Bagby (2) and Shaffer (19), phobias exhibit certain common features:

1. The phobia dates from some single traumatic episode, usually occurring in childhood, involving intense fear.

2. The unpleasant experience is associated with a forbidden or shameful action. For this reason the patient avoids thinking

about it and is unable to discuss it freely with others. The experience is removed from mind by protective forgetting, or repression.

3. The phobia persists because the guilt associated with the original fear situation prevents conscious recall of the episode, and the intense fear of the object precludes subsequent more favorable associations that might neutralize the original fear experience.

4. Fear reactions involving repressions are not established when the individual sustains a satisfactory relation with his parents or other advisers.

5. Though initiated by fear in a particular situation, the phobia may spread to a class of objects.

6. When the repressed traumatic experience is recalled with the aid of free association, dream interpretation, or other psychological techniques and is assimilated by the patient, the intensity of the phobia is greatly lessened.

ILLUSTRATIONS OF PHOBIAS

A young woman sought psychological assistance because of an intense fear of crowds. Whenever there were many people about her, she was afraid that she would be crushed or die from suffocation. This fear, acknowledged as absurd by the patient, nevertheless kept her a virtual prisoner in her home. She could not bring herself to ride on crowded busses, go shopping in large stores, or take trips by train. The fear was traced to early childhood, but the patient could offer no explanation for her reaction.

With the aid of free association, however, she recalled a long-forgotten terrifying experience. As a young child she had been granted permission to watch the circus parade go by her house but was strictly warned not to follow it into town. The excitement of the parade proved too much, and against orders she followed the parade into the center of town, where she soon found herself hemmed in on all sides by towering adults. She vigorously tried to push her way out but was unsuccessful. She then became frightened and began to cry. Thinking that she was crying because she couldn't see, a kind gentleman helped her out of the crowd to a front row. After a time her fear subsided and she returned home. Under the

circumstances, she was unable to discuss her harrowing episode with her parents. The entire experience was "forgotten" until recalled by free association. Once the source of her fear was known, she gradually overcame most of her fear of crowds.

A certain man suffered from a phobia of being grasped from behind, the disturbance appearing in early childhood and persisting to his fifty-fifth year. When walking on the street, he found it necessary to look back over his shoulder at intervals to see if he was closely followed. In social gatherings he arranged to have his chair against the wall. It was also impossible for him to enter crowded places or to attend the theater. His other difficulties can readily be inferred. Significantly, he could give absolutely no explanation for the origin of his fear. In his fifty-fifth year he returned to the town in which he had spent his childhood. After inspecting his old home, he went to the corner grocery and found that an old boyhood friend was still behind the counter. He introduced himself and they began to reminisce. Finally the groceryman said, "I want to tell you something that occurred when you were a boy. You used to go by this store on errands and when you passed you often took a handful of peanuts from the stand in front. One day I saw you coming and hid behind the barrel. Just as you put your hand in the pile of peanuts, I jumped out and grabbed you from behind. You screamed and fell in a faint on the sidewalk." The episode was then vividly recalled for the first time in almost fifty years, and the phobia disappeared after a brief period of adjustment. [Condensed from Bagby (2, pp. 47-48).]

WAR NEUROSES

Psychoneuroses that occur among military personnel in peacetime or during the training period in wartime are adequately classified on the basis of the standard nomenclature. When they arise under combat conditions, there is a temptation to invent new diagnoses. The First World War contributed the term *shell shock*; the Second World War contributed *combat fatigue*. Both terms are misleading in that they erroneously imply that it was the physical effects produced by exploding shells or the fatigue of battle that were responsible for the appearance of neurotic symptoms. Actually, it was the psychological strain of forced

and continued exposure to the terrifying and dangerous sounds and scenes of battle that precipitated symptoms. A compromise solution to this problem of nomenclature, which was adopted by many psychiatrists during the Second World War, was to classify minor mental disorders of a nonpsychotic nature that were associated with war under the general heading of *war neuroses*. There is, however, some objection even to this term, since many combatants who exhibited neurotic symptoms when under stress were not true psychoneurotic patients.

During the Second World War, competent observers (16) noted that men who developed war neuroses fell into two groups. In one group were men of reasonably sound personality who previously had adapted satisfactorily to civilian and military life. When exposed to some especially intense experience such as the evacuation from Dunkirk (18) or when psychologically unprepared for battle due to insufficient training, physical fatigue, or low morale (16), these basically normal men developed a characteristic pattern of symptoms. The most frequently noted reactions were recurring nightmares involving the enactment of traumatic scenes, sleeplessness, inner unrest, pallor, startle reactions to sudden loud noises, vacant, staring facial expression, physical exhaustion, coarse tremors, irritability, listless apathy, and withdrawal from group activities. Even with relatively superficial treatment, almost all of these individuals recovered in a comparatively short period and were returned to some form of military duty. Acute transitory symptoms of this type occurring in essentially nonneurotic individuals might more accurately be classified as *combat stress reactions* rather than war neuroses.

The second group of men diagnosed as suffering from war neuroses resembled the psychoneurotic patients usually seen in peacetime with respect to previous history, symptomatology, and prognosis (16). Almost all of these individuals had a history of preexisting psychoneurotic tendencies. In general they were shy, timid, self-conscious individuals who lacked aggressiveness and daring. Many had shown signs of emotional instability and poor adaptability in civilian life, and it is quite probable that they would eventually have become neurotic even if they

had remained at home. However, since neuroses result from the inability of defective personalities to cope effectively with adverse environments or difficult life situations, exposure to battle might well have been the critical factor in releasing potential neurotic symptoms. The symptoms observed in this group were the classical symptoms of hysteria, neurasthenia, anxiety state, and obsession-compulsion neuroses. Like civilian patients, these psychoneurotic soldiers required intensive and prolonged treatment. Because of their poor prognosis, they were usually hospitalized or discharged as no longer fit for military duty. For this group the diagnosis of "war neurosis" was appropriate.

Incidence.—Available data from the Second World War indicate that the great majority of soldiers and sailors adapted successfully to the rigors of modern warfare. In isolated instances, acute stress reactions of short duration were observed in a substantial proportion of combatants, but the incidence of true psychoneuroses was low. It would appear from various psychiatric reports (4, 15) that less than 2 per cent of all men in overseas areas developed psychoneuroses of sufficient severity to require hospital care. During the war period only a fraction of 1 per cent of the Army was confined to hospitals or quarters on any one day because of psychoneuroses (1). The low incidence of psychoneuroses among combat troops was mainly due to the elimination of potential neurotics at induction and training stations. Close to 5 per cent of the Second World War draft registrants were rejected by local boards or discharged during the training period because of psychoneuroses (1).

Observations made by British and American investigators (5, 16) agree that combat stress reactions and true war neuroses were most prevalent among

1. Raw, insufficiently trained troops.
2. Inactive, defeated, or retreating troops.
3. Fatigued men exposed to prolonged or intense combat.
4. Regiments with low morale due to lack of confidence in leader or absence of group spirit.
5. Unarmed or restricted men who, while under fire, were unable to fight back, attack, or retreat.

Interpretation of War Neuroses.—Although not deliberately or consciously planned, combat stress reactions and war neuroses occur because they serve a purpose, namely, they provide a “solution” to a difficult situation. War is a disagreeable and dangerous profession. As long as a man remains in a combat area, there is a possibility that he may be disabled or killed. Military restrictions reinforced by a personal sense of duty make the danger inescapable. To the soldier torn between duty and desire for self-preservation, the disabling symptoms of a psychoneurosis afford a convenient solution that removes him from danger and at the same time preserves his self-respect. If incapacitated by neurotic symptoms, he must be temporarily relieved from active duty or discharged, even against his will. In this connection, it is interesting to note that wounded soldiers rarely present neurotic symptoms while physically ill but occasionally develop psychoneuroses as soon as their wounds have healed and they are ready to return to active duty. Further corroborating evidence is the fact that neuroses are seldom observed among prisoners of war.

Naturally, not all war neuroses can be explained on the basis of conflict between fear and honor. In individual cases the dynamic forces that motivate neurotic behavior may be unique and complex. For example, guilt feelings resulting from failure to aid a wounded friend may lead to distressing symptoms as a form of self-punishment, and resentment against “unfair” military regulations may produce vindictive neurotic reactions. However, even in these cases, fear is often a contributory factor, and a fundamental purpose of the neurosis is to remove the patient, at least temporarily, from the dangers of battle without loss of self-respect. To avoid misunderstanding, it should be emphasized that men suffering from war neuroses are not aware of the meaning of their symptoms, and the symptoms are neither faked nor deliberately planned. Actually, they may struggle against their symptoms and sincerely attempt to carry on despite their neuroses. The neurotic process is activated by unconscious forces and operates below the level of conscious awareness.

Symptomatology.—The following are some of the more common syndromes noted (5) during the Second World War among

undifferentiated patients suffering from combat stress reactions or from true war neuroses.

Fear Reactions.—The usual bodily manifestations of fear, including rapid heartbeat, tremor, staring eyes, and weakness of the limbs, were frequently noted. More severe cases exhibited acute panic with or without mental confusion. In some instances the paralyzing effect of fear produced loss of speech, immobility, and stupor.

Psychosomatic Symptoms.—The emotional disturbances associated with war frequently led to physical symptoms that had no definite organic foundation. The most common complaints were headaches, gastric ulcers, disordered heart action, breathlessness, dizziness, blurred vision, shooting pains in various parts of the body, muscular aches, and loss of sensory and motor functions.

Conditioned Reactions.—These centered about the “reliving” of emotional and physical symptoms that were present at the time of the traumatic experience which precipitated the neurosis. Thus a patient who injured his arm during an explosion might later exhibit a functional paralysis of the arm, and a patient terrified by the sound of planes and bombs might later jump, scream, and tremble whenever he heard a loud sound. A patient who had been trapped in a burning tank later became panicky whenever confined in an elevator or small room. Frequently there was a delay of several hours or days between the occurrence of the terrifying experience and the appearance of conditioned reactions.

Amnesia.—Many psychoneurotic soldiers exhibited memory gaps for traumatic episodes, and fugue states were not uncommon. The purpose of the amnesia was to protect the individual from painful memories. Amnesia was most apt to occur when the disturbing experience was colored with feelings of guilt or self-reproach. In descending order of frequency, the affective features of amnesia symptoms were anxiety, depression, and paranoid tendencies.

Fatigue Syndromes.—Men in combat areas for long periods sometimes broke under the strain of constant tension and exhibited marked fatigue symptoms even in the absence of actual

physical exertion. Common symptoms were drowsiness, diminution in initiative, tendency to shun others, irritability, hypercritical attitude, restlessness, loss of confidence, insomnia, and nightmares. In most cases the prominent affective feature was apathy. This reaction was frequently noted among pilots.

Exhaustion Syndrome.—This clinical picture was mainly observed in men who had undergone great bodily danger and physical exertion accompanied by loss of sleep and inadequate meals. Characteristic physical symptoms were thinness of the face, pallor, loss of weight, insomnia, and functional neurological disturbances. Mental reactions included anxiety, amnesia, apathy, and stupor. Recovery was usually rapid in these cases.

Treatment.—In both wars it was found that there was a direct relation between promptness of treatment and incidence of recovery. Best results were obtained when combatants received psychiatric first aid at advance bases and when the more severe or unresponsive cases were promptly evacuated or hospitalized. In treating neurotic soldiers, individual psychiatrists tended to use the same forms of psychotherapy that they had personally found most effective in civilian practice. Since the more common psychotherapeutic techniques are described in Chap. VIII, the present discussion of treatment may be limited to a few procedures that proved useful in treating large numbers of soldiers quickly and with limited professional personnel (6, 11).

In the acute or early stages, extensive use was made of rest, controlled sleep, nourishing food, and favorable surroundings. Hypnosis and narcotherapy were frequently applied in those cases where it was necessary to uncover conflicts, clear up amnesias, or desensitize the patient. The objective of both procedures was to place resistive or amnesic patients in a trance-like state. With hypnosis this was achieved by verbal suggestions. Narcotherapy consisted of inducing a seminarcoosed state by the intravenous injection of sodium amytal or pentothal. While in either of these cooperative states, patients readily recalled and relived their traumatic battle experience and thus released pent-up emotions. Information obtained in this fashion was subsequently discussed with the patients when they became conscious again. When reinforced with psychotherapy, these

uncovering techniques proved very effective in quickly alleviating troublesome symptoms.

An important aim of therapy was to assist the patient to understand objectively, and adjust to, his fear of returning to active duty. The outcome was primarily determined by the previous personality and the general attitude of the patient. After a period of rest supplemented by psychotherapy, most patients with fairly sound personalities accepted their responsibility and voluntarily decided to return to the fight and make the best of a difficult situation. In these cases prognosis was usually favorable. Men burdened with neurotic traits and men with unfavorable attitudes did not respond well to treatment. When patients were coerced or persuaded against their will to rejoin their outfits, their symptoms generally returned.

Outcome.—Reports of the Second World War (6, 20, 22) indicate that from 80 to 90 per cent of combatants who developed neurotic symptoms recovered or improved sufficiently to be returned to full or limited military duty. The high recovery rate suggests that most of the patients suffered from combat stress reactions rather than true psychoneuroses. Some of the unimproved patients who received medical discharges made a satisfactory adjustment when they returned to civilian life, but others became chronic cases. The poor prognosis of the latter group is in large measure due to the pension system, which rewards the continuation of symptoms. It is quite probable that a substantial number of veterans suffering from chronic war neuroses would recover if a lump cash settlement were substituted for their pension.

WAR AND THE CIVILIAN POPULATION

Observations made in Spain (14) and England (5, 13) indicate that the terrifying experience of being subjected to repeated air attacks had surprisingly little effect on the civilian population. There was no appreciable increase in the number of psychoneurotic patients visiting clinics, and in many cases the air raids had an ameliorative effect. The greater resistance of the civilian population as compared with troops is subject to many

explanations. One important factor is the greater freedom of the civilians. When air-raid sirens sound, they are free to seek shelter. They do not have to hold their ground in the face of enemy attacks. A more significant explanation is the absence of motivation. The civilian has nothing to gain by developing a neurosis; the soldier may gain his freedom and a pension.

TRAUMATIC NEUROSES

Traumatic neuroses are psychoneuroses that follow physical injuries or accidents. Neurological or physiological structural changes may or may not be evident. Diagnosis is frequently made by eliminating the possibility of an organic basis for the symptoms. Two critical indicators are: (a) a marked discrepancy between the severity of symptoms and the extent of actual injury and (b) resistance of symptoms to treatment. Because of the nature of the precipitating agents, traumatic neuroses are rare in children and are more common in men than in women.

The symptom pattern is determined by the personality make-up of the patient and the precipitating traumatic situation. Especially in the case of unskilled or semiskilled workers, hysterical reactions tend to predominate. Anxiety symptoms are more often encountered at higher occupational levels. There is no direct relationship between the extent of the injury and the severity of the neurotic reaction. Very severe injuries may be followed by mild reactions, whereas the mere anticipation of injury, in the absence of actual injury, may lead to pronounced symptoms. Janet (9) has reported the case of a man who, while riding on a moving train, foolishly got down on a step to pass from one door to the other. At that moment he became aware that the train was about to enter a tunnel and that his left side, which projected, would be crushed against the arch of the tunnel. He fainted, but fortunately he was taken inside the train without suffering the slightest injury. Nevertheless he developed a paralysis of the left half of his body.

The etiological factors are difficult to evaluate. In most cases there is a latent predisposition to develop a neurosis that is crystallized by the injury. The desire for compensation, self-pity,

fear of subsequent work impairment, and resentment against one's employer are important contributory factors. Traumatic neuroses are sometimes referred to as *compensation* or *vindictive neuroses*. The etiological significance of self-gain motives in compensation neuroses is seen in the fact that traumatic neuroses rarely follow injuries resulting in the loss of an arm or leg for which the victim has definite grounds for claiming indemnity for disability.

Since the patient with a traumatic neurosis has a vested interest in his symptoms, prognosis is poor. Symptoms persist until the suit for compensation is terminated either by a monetary award or a definite refusal to pay any indemnity. As long as there is a possibility of a financial settlement, psychotherapy is of limited value. Liberal compensation laws and generous court awards tend to increase the incidence of traumatic neuroses. Countermeasures consist of the prompt payment of a reasonable indemnity and immediate resumption of active employment. Too long a delay between the accident and settlement or return to work intensifies resentment and expectation of compensation, destroys morale, and encourages chronic invalidism.

As in other forms of neuroses, the patient with a traumatic neurosis sincerely believes in the reality of his symptoms. He is not intentionally pretending to be ill. It is often difficult, however, to distinguish between the malingerer who willfully fakes his symptoms and the traumatic patient who unconsciously exaggerates his ailments (8).

PSYCHONEUROTIC COMPONENTS IN PHYSICAL DISEASES

It has long been known that the emotional and psychological life of an individual frequently influences his physical health. Conservative estimates indicate that from one-third to one-half of patients who consult physicians because of physical symptoms either have no bodily disease or have ailments that are partly due to organic pathology and partly dependent on emotional factors. In the past, physicians trained in the organic tradition

of medicine have either dismissed these patients as neurotic or have attempted by means of intensive physical examinations, laboratory studies, and exploratory operations to discover and treat some obscure or insignificant defect that had nothing to do with the illness. More recently, however, physicians have realized the value of studying the patient as a whole.

A fundamental tenet of this new approach, which has come to be known as *psychosomatic medicine*, is that it is as important to examine and treat the person as it is to diagnose and treat the disease, since the symptoms, the course, and even the outcome of physical disease may be affected by psychological factors. The primary purpose of this psychological-medical approach is not to determine whether a disease is functional or organic but rather to ascertain how much of the problem is emotional and how much is physical.

Cardiac disorders provide a convenient illustration of the viewpoint of psychosomatic medicine. The majority of patients who seek medical treatment for heart symptoms have nothing organically wrong with their heart. The symptoms are usually the product of suggestion, misleading information, or anxiety. For example, individuals whose parents have died suddenly from a heart attack frequently think that they also have defective hearts. This idea, reinforced by apprehension, may actually produce subjective or objective cardiac symptoms. The importance of emotional factors is also apparent in many patients with organic heart disease. The actual amount of physical injury may be slight, but the patient may be so worried about his heart that he is totally disabled. A third possibility is that acute emotional disturbances may impose an extra burden on an already weakened heart and thus hasten a cardiac breakdown.

The effect of emotions on bodily changes is also apparent in many gastrointestinal disorders. Before an examination, students frequently develop nausea, loss of appetite, and diarrhea. Businessmen when working under pressure often complain of indigestion, heartburn, and abdominal discomfort. Special attention has been focused on the role of emotional disturbances in the development of peptic ulcers. Competent investigators have suggested that prolonged emotional tension, through stimu-

lation of subcortical centers, may so disturb the motility, secretions, and blood supply of the gastrointestinal tract as to precipitate organic lesions or ulcers that otherwise might not have developed. Psychosomatic relations have been reported in a variety of other physical disorders. The interested reader is referred to the writings of Dunbar (3) and Weiss and English (21).

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CHAPTER VIII

TREATMENT OF THE PSYCHONEUROSES

Preliminary Examination.—Since a knowledge of the patient's symptoms, past history, and general personality is essential for diagnosis and treatment, most clinicians prefer to devote the initial interview to obtaining a fairly detailed case history. The easiest and in some respects the safest procedure in taking a history is to follow a standard outline and ask all patients the same questions. There are some objections to this approach, however. One criticism is that questions which may be pertinent in one case are a waste of time in another. A more serious criticism is that a stereotyped question-answer interview is artificial and restrictive. The patient feels that he must limit his responses to the questions asked and often hesitates to volunteer additional information that may be of the greatest significance. On the other hand, too little guidance may result in a rambling, time-consuming, incomplete case history. A middle course is for the therapist to maintain general control of the interview by means of an occasional question but to permit the patient to tell his story in his own way.

Some of the main areas usually covered in a case history are

1. Name, age, marital status, and other identifying data.
2. Description of current symptoms, their development and possible origin.
3. History of any previous mental disturbances.
4. Personality make-up of the patient: habitual emotional reactions, attitude toward self and others, feelings of insecurity, level of intelligence, eccentricities, temperament, interests, etc.
5. Social adjustment: many or few friends, social and recreational activities, popularity, attitude toward associates, "lone wolf" or gregarious, etc.
6. Early home background: emotional atmosphere of the home, outstanding childhood experiences, relationship of patient

to other members of the immediate family, personality and stability of parents and siblings, etc.

7. Psychosexual development: early sexual experiences, attitude toward sex and members of the opposite sex, marital adjustments, etc.

8. School history: amount of education, quality of work, attitude toward school, relations with teachers and other students, etc.

9. Work history: occupation, attitude toward job and coworkers, capacity for work, periods of unemployment, how long jobs held, etc.

10. Physical health: physical symptoms, energy level, injuries and diseases, use of alcohol and drugs, etc.

11. Family history: personality and mental health of parents, siblings, and other close relations; unfavorable hereditary influences; etc.

Psychological Tests.—It is often desirable to supplement the case history with an intelligence or personality test. The scale most frequently used for determining the mental level of children is the Revised Stanford-Binet, and the test most favored for adults is the Wechsler-Bellevue Intelligence Scale.

Personality measures currently used in the examination of psychoneurotic patients are usually of the projective or questionnaire type. Projective tests (22) depend on the interpretation of imaginative productions and require special training. Two examples are the Thematic Apperception Test and the Rorschach Test. The former consists of a series of pictures depicting a variety of dramatic scenes. After examining each picture, the patient is asked to make up a story about the scene. The theory underlying the test is that the story elaborated by the patient indirectly exposes his own strivings, wishes, and fears. A major limitation of the test is that no satisfactory scoring system has yet been devised.

Ten ink blots on individual cards constitute the Rorschach test. As the patient looks at each ink blot he is asked to report what it looks like or what it could be. Proponents of the test maintain that the responses made by the patient, when expertly

scored and interpreted, give an X-ray picture of the patient's basic personality. Although the Rorschach has many enthusiastic supporters who have reported a wealth of favorable experimental data, a large number of clinical psychologists question its usefulness and validity.

Personality questionnaires (4) generally consist of a large number of items describing a variety of traits. Some of the more popular standardized questionnaires are the Adams-Lepley Personal Audit, the Bell Adjustment Inventory, the Bernreuter Personality Inventory, the California Test of Personality, the Guilford-Martin Inventory, and the Minnesota Multiphasic Personality Inventory. The standard procedure is to give the patient a copy of the test and ask him to indicate whether or not, or to what degree, he has each of the designated traits. Some typical questions included in personality inventories are the following:

- Do you think that you worry more than most people?
- Do ideas often run through your head so that you cannot sleep?
- Do you think that you are more touchy or sensitive than most people?
- Do you consider yourself a rather nervous person?
- Does criticism disturb you greatly?
- Are you easily discouraged?
- Do you seem to have more than your share of aches and pains?
- Do you feel tired and listless most of the time?
- Does your heart sometimes speed up for no apparent reason?
- Do you sometimes envy the happiness that others seem to enjoy?
- Are you often troubled by the idea that no one understands you?
- Are you inclined to be uncomfortably self-conscious?
- Have you ever been extremely afraid of something that you knew could do you no harm?
- Are you troubled by feelings of inferiority?
- Do you often find that you cannot make up your mind until the time for action has passed?
- Are your feelings too easily hurt?

Are you often troubled by the idea that people do not like you?
Are you subject to severe sick headaches?

Numerical values are assigned to each response. By adding these values, a total score for a group of related items can be obtained. Total scores frequently indicate general personality patterns and have proved moderately useful in diagnosis. However, in clinical practice the real value of personality questionnaires lies not in total scores, which are often misleading, but in the individual test items. The examination of responses to specific questions provides a quick and convenient method for obtaining a comprehensive summary of the patient's symptoms and a self-evaluation of his feelings, attitudes, and behavior.

Physical Examination.—Even if it is apparent from the case history that the patient is most likely suffering from a psychoneurosis, it is strongly recommended that a physical examination precede active psychotherapy. One reason for this is that physical disorders occasionally give rise to typical psychoneurotic symptoms. A more important reason is that many psychoneurotic patients firmly believe that they are physically ill. Unless examined and found to be free from any pertinent physical ailment, they will persist in this belief and reject all attempts to explain or treat their symptoms on a psychological basis.

When physical findings are negative, the patient should be candidly informed of the psychological nature of his difficulties and firmly told that there is no organic foundation for his symptoms. It is not only unethical but also injurious to humor a neurotic patient by telling him that he has some vague physical defect that can be corrected by surgery, massage, or medication.

PSYCHOTHERAPY

Psychotherapy, which may be defined as treatment of personality disorders by psychological procedures, is the favored and most effective approach to the psychoneuroses. Some of the older forms of psychotherapy are suggestion, exhortation, explanation, advice, persuasion, and hypnosis. Although they do not enjoy their former prestige, these techniques are still the

most extensively used because they are easy to apply and frequently produce prompt relief of symptoms. One criticism is that they are suppressive methods which ignore the basic conflicts and concentrate on the removal of surface symptoms, with the consequence that cures are often temporary. A second criticism is that they assign a dominant role to the therapist and place the patient in a passive, dependent position.

In the newer procedures the patient actively participates in the analysis and treatment of his difficulties, and the counselor assumes a more passive role. The patient is encouraged to think and express himself freely, with no interference and a minimum of guidance from the therapist. Unlike the older suppressive methods, the newer procedures are expressive in principle and attempt to uncover and liquidate the fundamental conflicts responsible for the surface symptoms. Some of the newer techniques are mental catharsis, psychoanalysis, and nondirective therapy. The popular usage of these methods has been somewhat restricted by the fact that they require special training and are time consuming, hence expensive.

Dynamics of Psychotherapy.—Patients seek treatment because they have distressing symptoms that incapacitate them and tie up vast amounts of energy. An immediate aim of therapy is to free the individual of his symptoms so that he will be happier and able to make better use of his energies. A more fundamental aim of psychotherapy, however, is to help the patient to regain his self-confidence and to strengthen his personality so that he can definitely settle old issues and face future problems with confidence. This is a difficult task. It means essentially that the patient must undergo at least a partial change of personality. He must modify his immature emotional attitudes, eliminate unhealthy but firmly ingrained traits, and reorient his views on life. Naturally, the major responsibility for this transformation rests with the patient. No one can change his personality for him; he must do it himself. Most psychoneurotic patients realize this, but mainly because of their loss of self-confidence they are unwilling or unable to analyze and remedy their defects. It is for this reason that they seek outside assistance.

The function of the therapist is to help the patient to help himself. He can do this by first establishing a favorable emotional relationship, or *rapport*, with the patient. When *rapport* is present, the patient has confidence in the therapist, is willing to reveal his innermost secrets, and is motivated to cooperate actively in the treatment. Without *rapport* there is little hope for cure. For this reason the personality and attitude of the therapist are of great importance. To be successful, the therapist must be genuinely interested in people, and to some extent he must be able to put himself in the place of the patient and appreciate his feelings. By his sincerity, tact, and understanding, he must inspire the confidence and enlist the cooperation of the patient. He must be tolerant of human foibles and neither condemn nor ridicule the thoughts and actions of his patients. His main function is to encourage the patient to persist in his search for greater self-understanding and to help him regain his shattered self-confidence, so that the patient may have the courage to face and solve his difficulties through his own efforts and to move forward to better health.

PSYCHOTHERAPEUTIC PROCEDURES

Suggestion.—This is one of the oldest and most commonly used techniques for treating psychoneurotic patients. It is the favorite method of the general medical practitioner, who frequently combines reassurances and verbal suggestions with the administration of some innocuous medication or injection. The occasional success of charlatans in treating patients with patent medicines, special baths, and impressive apparatus is due to the influence of suggestion. The active ingredients in religious healing are suggestion and faith.

At first glance, suggestion as a therapeutic weapon may seem naïve and ineffective. Actually, in its myriad forms, it is often a useful means of removing current symptoms. It is in fact doubtful whether any form of treatment is free of suggestion, since the attitude and manner of the therapist and his choice of words constitute important sources of indirect suggestion. Some years ago, autosuggestion, or self-suggestion, was made popular by

Coué (2), who instructed his patients to repeat 20 times each morning and night the following magic formula: "Day by day, in every way, I am getting better and better."

Before discounting the force of suggestion, it is well to note that propaganda and advertisement depend on it for their effect. Many individuals, whether psychoneurotic or normal, will believe almost anything if the idea is forcefully presented and frequently repeated. The limitation of this approach is that it provides, at best, symptomatic relief. Since no attention is given to the cause of the neurosis, old symptoms soon recur or are replaced by new symptoms. The removal of symptoms by suggestion will bring about a permanent cure only in those cases where the original situation that gave rise to the symptoms is no longer present and where the symptoms have simply persisted as mental habits.

Although satisfying to the patient, the use of medicines, electrical massage, mineral baths, and other forms of physical therapy that depend upon suggestion for their effect is especially unfavorable because it creates an erroneous mental attitude. After a "cure" by these methods, the patient is convinced that his symptoms were due to some physical ailment. He is thus denied insight into his condition and is left powerless to combat subsequent life difficulties. It is much more desirable to leave the patient with some understanding of the mental and emotional basis of his symptoms and the knowledge that he has cured himself without medicines or physical aids. In this way he is fortified against subsequent attacks (18).

Exhortation.—This approach, frequently used by parents and physicians, combines authority with appeal to will power and common sense. Common precepts are "pull yourself together," "snap out of it," "have courage and fortitude," "ignore your symptoms," "stop worrying," and "think of other things." The role of the counselor is that of a sympathetic friend or an inspirer of confidence and morale. The patient is encouraged to believe that he can recover if he makes up his mind to do so. The difficulty with this form of therapy is that the patient is usually unable to follow the well-intended advice. He does not know how to pull himself together, and he finds it difficult to

stop worrying. A second objection is that it ignores the cause for the symptoms.

Hypnosis.—*Hypnosis* is an artificially induced trance state, characterized by heightened suggestibility. Early studies conducted by Charcot and his associates in Paris pointed to a close affinity between hypnosis and hysteria. It was noted that typical hysterical symptoms could be induced and cured by hypnosis. This led to the erroneous theory that hypnosis is a form of hysteria and that only hysterical patients are hypnotizable. The Nancy School of Bernheim and Liébault conclusively demonstrated that normal individuals can be hypnotized and that the basis of hypnosis is suggestion (10). However, there was an element of truth in Charcot's observations. Hypnosis is today used primarily in the treatment of hysterical symptoms. Furthermore, artificial hysterical symptoms such as paralysis, contractures, anesthesia, amnesia, mutism, blindness, deafness, and dual personality can be experimentally induced in healthy individuals by hypnosis (8).

There are many techniques for producing hypnotic trances, but the key factors in most procedures are relaxation and verbal suggestions. Physicians sometimes facilitate relaxation by administering a mild sedative. Ordinarily, however, the hypnotist seats the subject in a comfortable chair and merely asks him to relax. After the subject has been made comfortable, the hypnotist verbally suggests to the patient, in a variety of ways, the idea that he is sleeping. Some typical phrases, which are repeated several times, are "Relax, let yourself go—listen only to my voice—relax and go to sleep—you are feeling drowsy and sleepy—your eyes are feeling heavy—relax and go to sleep—your eyes are heavy and sleepy—relax—close your eyes and go to sleep—you are drowsy and tired—go to sleep—go to sleep—you are fast asleep—you are fast asleep."

When the subject appears to be in a trance state, certain tests may be made to determine whether he is really hypnotized. The hypnotist may suggest to the subject that his eyes are fast asleep and he cannot open them. The subject is then asked to try to open his eyes, but at the same time he is given strong counter-suggestions that he will be unable to do so. If the subject finds

it difficult or impossible to execute these commands, the hypnotist may proceed with other tests. He may inform the subject that his left hand has lost all sensations so that it no longer feels pain. When the hand is pinched or pricked with a sharp instrument, the hypnotized subject exhibits no overt expression of pain, even though an analysis of the electrical activity of the skin indicates a physiological response. After restoring sensitivity, the hypnotist may suggest to the subject the idea that his arms are so rigid and heavy that he cannot move them. When asked to try to lift his arms, the subject will contract his muscles and in other ways show that he is making a vigorous attempt, but if he is really in a hypnotic trance, his efforts will be of no avail. The rigidity or paralysis immediately disappears as soon as the hypnotist states that the arms can now be moved in a normal fashion. A final check may be the induction of hallucinations. For example, the hypnotist may ask the subject to sing the words of a song being played by a nonexistent orchestra.

If these tests are successful, it may be assumed that the subject is in a hypnotic trance. To terminate the hypnosis and bring the subject out of the trance, the hypnotist merely informs the subject that he will awaken completely refreshed at a given signal. A convenient signal is to have the hypnotist count to 5. After a subject has been hypnotized a few times, it is usually possible to induce a deep trance with a minimum of preliminaries.

A special feature of hypnosis is that suggestions made to the subject while in a trance may be carried out at a later time when the subject is no longer under the direct influence of the hypnotist. This phenomenon is known as *post-hypnotic suggestion*. Thus before waking a subject, the hypnotist may ask him to telephone a friend at 8:00 A.M. the next day. The following morning at 8:00 A.M. the subject, without realizing why, will have a sudden and irresistible urge to call the friend. When the friend answers the telephone, the subject will invent some plausible excuse for the call.

When hypnotized, the subject looks somewhat as if he were asleep, but experimental data (24) indicate that from a physiological point of view, hypnosis resembles the waking state more

than the sleeping state. A competent operator can place a good subject in a deep trance and then have him open his eyes and, while still hypnotized, behave as if he were fully awake. Some operators, notably W. R. Wells (21), have demonstrated that all the symptoms of hypnosis may be produced without any suggestions of sleep or drowsiness.

Value of Hypnosis.—As a therapeutic technique, hypnosis has been found useful in the treatment of hysterical patients suffering from amnesia. When in a hypnotic trance, patients readily recall lost or repressed memories, and the recalled memories may be carried over to the waking state by means of post-hypnotic suggestions. Direct suggestions given during hypnosis and supplemented by post-hypnotic suggestions are often useful in the treatment of other hysterical symptoms such as loss of voice, deafness, or paralysis. Hypnosis has also been employed to cure insomnia, reduce tension, eliminate neurotic habits, and determine the origin of phobias.

Although spectacular cures have been produced with hypnosis, the procedure has several drawbacks. One criticism is that it is a superficial form of therapy, limited to surface symptoms. The underlying conflicts remain unsolved, so that cures are usually temporary. Secondly, the treatment is restricted to patients who, in addition to being good hypnotic subjects, have no objection to being hypnotized. Many individuals either are not susceptible to hypnosis or they object to being hypnotized. Even if susceptible, the latter cannot be hypnotized, since it is generally agreed that it is impossible to hypnotize a person against his will. A final objection is that neurotic patients occasionally bring legal actions against the hypnotist on the grounds that their minds were unfavorably affected by the treatment or that they were exploited for immoral purposes while in the trance state. Even though these lawsuits are based on imaginary complaints and are usually dismissed, they can be quite annoying.

These criticisms have led to a gradual decline in the use of hypnosis during the past half century. Recently, however, interest in hypnosis has been revived as a result of its combination with psychoanalysis to form a new therapeutic technique known as *hypnoanalysis*. Since hypnoanalysis is essentially an

adjunct to psychoanalytic treatment, it will be discussed in the following chapter.

Popular beliefs concerning the harmful effects of hypnosis are unfounded. It is unwise and to some extent dangerous for an untrained person to experiment with hypnosis. This is true of any powerful tool. When properly performed, hypnosis is neither harmful nor dangerous. There is no evidence that hypnosis reduces a person's will power or produces any physical or mental symptoms. While in a trance, a person will not engage in any immoral or criminal act that he would not commit in the waking state. When improper, harmful, or dangerous suggestions are given, the subject refuses to cooperate and usually comes out of the trance. A hypnotized person may unwittingly shoot and kill a person with a revolver loaded with real bullets if he has been assured the bullets are blanks, or he may commit suicide by taking some poison that has been misrepresented to him as a harmless substance; but planned crimes of this type are also possible in the waking state.

In laboratory experiments (11), hypnotized subjects have been persuaded to steal a dollar from the experimenter, to try to touch a rattlesnake placed behind invisible glass, and to throw acid at the experimenter seated behind invisible glass. However, these studies can be dismissed as artificial situations. The subjects, who were college students, did what they were told to do as part of the experiment, confident that the professor would not really permit them to harm themselves or others.

More realistic investigations of the possible antisocial use of hypnosis yield negative results. Some interesting examples have been reported by Erickson (5). In one study a student was hypnotized and directed to read his roommate's letters. After many failures, the experimenter finally succeeded in persuading the student, while in a trance, to open one of his roommate's letters. The student first looked at the blank side of the letter and declared that there was no writing on it. When the experimenter asked him to turn it over, he held the letter bottom side up. After he had been instructed to turn it right side up, he found that he could not read the letter because he did not have

his glasses. After much searching, the glasses were found, but the student then declared that the writing was so difficult he could not read it. When the experimenter tried to help him, the student developed a psychic blindness and could not see at all.

Explanation.—When a physically ill person consults a physician, he expects the doctor to examine him and then explain the nature and probable cause of his symptoms. Psychoneurotic patients expect the same information. After reporting their symptoms, they promptly ask the clinician for an explanation. Unfortunately, the psychotherapist cannot X-ray the patient's emotions or send his conflicts to a laboratory for analysis.

In diagnosing and interpreting psychoneurotic symptoms, the counselor must depend largely on data supplied by the patient, and intensive treatment may be required to obtain the necessary information. Material reported during the first few interviews is often inadequate or misleading. The reason is that neuroses are complex structures, designed to afford a partial adjustment to some intolerable situation or conflict that may have been "forgotten" through repression. The patient has a need for the symptoms and is unwilling or unable to examine their cause and purpose. The therapist must try to elicit the pertinent facts cautiously without probing too quickly into the deeper aspects of the neurosis. If the patient is unduly rushed, he will become resistive or discontinue treatment. The safest policy is to have the patient set his own pace and gradually make his own interpretations.

To hasten treatment and to encourage the patient to face specific problems, the therapist may occasionally offer explanations, but these should be framed as possibilities that the patient is free to accept or reject. Even if the therapist has a good understanding of the problem, he should refrain from forcing his interpretations on the patient. Under no circumstances should the therapist argue with the patient concerning the correctness of any explanations offered by himself or the patient. At times it may be necessary to overlook or postpone consideration of important points that the therapist thinks the patient will be unable to handle. For example, nothing is gained and

much harm may result if the therapist tells the patient that his symptoms are due to latent homosexuality or repressed hatred for some member of his family.

As the patient gradually attains an understanding of his problems, the counselor may take a more active role in explaining how certain symptoms develop. In cases of anxiety and neurasthenia he may point out how strong emotions produce tension and disrupt the normal functioning of the body and thus facilitate the appearance of mental and physical symptoms. The mystery of hysterical loss of function is often clarified by examples of animals who "freeze" or play dead when exposed to terrifying situations, and by examples of humans who are struck dumb by sudden emotional shock. A discussion of the principles of conditioning and associative learning often permits a patient to understand how he has acquired his fears, peculiar ideas, and mannerisms. With compulsive patients, a description of displacement, projection, and other mechanisms is frequently of value.

Advice.—A few counselors with Jehovah complexes regard the giving of advice as their main function. These individuals, in common with certain newspaper and radio "experts," assume that they know everything and can competently advise patients on all their intricate and varied difficulties. Fortunately, most clinicians do not confuse themselves with God to that extent. They realize that they possess neither the wisdom nor the authority to settle all the problems of mankind. From experience they know that although patients frequently request advice, they rarely follow it and often resent being told what to do. A further objection to advice is that it encourages a dependent attitude and interferes with the psychological growth of the patient.

However, it would be incorrect to state that reputable counselors do not give advice. Many of them do, but they make a conscious attempt to restrict advice to particular situations and to use advice sparingly and indirectly. Some limit advice to general rules for sound mental health. It is not uncommon for psychotherapists to advise their patients to lead a balanced life of work, play, rest, and prayer; to substitute action for worry;

to face unpleasant realities; to renounce unattainable goals and ambitions; to talk out problems; and to adopt an optimistic attitude toward life. Some patients find general principles of this nature helpful. Others feel that these principles do not apply to them, or they experience difficulty in trying to put them into practice.

Persuasion.—The theory underlying this method, which is usually associated with Dubois and Dejerine, is that the patient can be persuaded to get well by “encouraging conversation,” explanation of symptoms, and appeal to reason. After gaining the patient’s confidence and hearing his story, the therapist in a logical manner explains the nature and meaning of symptoms, attempts to correct any false ideas or unwholesome mental habits, and encourages the patient to believe that there is no rational reason why he should not get well. One limitation of the method is that even after the patient attains intellectual insight, he may be unable to free himself of his symptoms because of his lack of emotional understanding. Since persuasion is concerned mainly with the conscious life, it is also open to the criticism that it overlooks the dynamic unconscious factors in the neurosis.

Mental Catharsis.—Most therapists today make some use of this procedure, particularly in the early stages of treatment. *Catharsis* consists simply in the talking out of troubles, worries, and conflicts. It is a form of medical confession, a way of relieving the mind of painful, guilt-laden, or distressing secrets. The patient lightens his burden by sharing his troubles with a sympathetic listener who does not criticize or ridicule his actions and thoughts. He is thus encouraged to face his difficulties with greater energy and a healthier mental attitude. The therapeutic value of catharsis has been well stated by Ross (18, p. 131). “Once the patient has learned to look at the disagreeable, its power to make him uncomfortable will be lessened. It is better if we have done shameful things to think of them as such, rather than pretend that we have not done them at all. A skeleton in the cupboard is a gruesome and fearful thing, but if we look at it often enough it will become only a bag of old bones.”

Other techniques based on the principle of catharsis are play therapy, finger painting, puppet shows, and play acting. The last, known as *psychodrama*, has been extensively used by Moreno. A general bibliography of these techniques has been reported by Sargent (19). The limitation of mental catharsis and allied procedures is that they are not comprehensive. As a result of ventilating or indirectly expressing his problems, the patient may obtain considerable relief and insight; but to avoid a repetition of past mistakes, he must increase his self-confidence and perhaps modify his attitudes and behavior. To attain these objectives, a more intensive study and treatment of the total personality is usually required.

Psychoanalysis.—Psychoanalysis is a highly specialized type of treatment, limited to patients who are financially able to have daily treatments for a period of from one to three years. By means of free association and dream analysis an attempt is made to trace the development of faulty emotional reactions from early childhood onward, with emphasis on the study of the unconscious mind and repressed infantile sexuality. The aim of therapy is to redirect the thinking and psychic energies of the individual from neurotic channels into more constructive ways of living. A more detailed description and evaluation is contained in the following chapter.

Nondirective Psychotherapy.—In recent years the trend has been for the patient to assume a more active role in the therapeutic process. The counselor has gradually relinquished his authoritarian position and has permitted the patient greater opportunity for spontaneous self-expression and self-guidance. Rogers's nondirective technique (16) represents the most extreme development of this passive approach. A basic assumption of nondirective therapy is that the patient has the right to solve his own problems and select his own life goals. Moreover, he will do a good job of it if given the chance. The nondirective therapist avoids advice, persuasion, suggestion, and similar intervention techniques, and even limits the use of explanation and encouragement to specific situations. Attention is focused on the individual rather than on any particular problem. The aim of therapy, according to Rogers, is not to do something to the

patient or to induce him to do something about himself but to assist the patient to grow and attain responsible maturity so that he can more effectively cope with present and future difficulties.

At first glance, nondirective therapy may appear ridiculously simple. The patient does all the talking, and the counselor merely sits back and occasionally says "M-mm" or rephrases some statement made by the patient. Actually, of course, this technique requires considerable skill and experience. The nondirective therapist is by no means a passive bystander in the counseling process. He has many complex and important functions. He must somehow make the client accept responsibility for working out his own solutions to his problems. With resistant or dependent patients, this may be a difficult task. He must encourage the free expression of feelings; accept, recognize, and clarify the negative and positive feelings of the patient; aid the patient to obtain insight; and clarify the different choices that may be made. Finally, he must terminate the client-counselor relationship in a satisfactory manner.

In some respects, Rogers's approach is similar to psychoanalysis. Both procedures permit the patient considerable freedom of expression. In psychoanalysis, however, the patient's associations are eventually directed to repressed unconscious memories, especially to repressed infantile sexuality. Nondirective therapy is more concerned with the expression of current difficulties at a conscious level. Although Rogers's technique is more time consuming than direct procedures, it requires only a fraction of the time necessary for a complete psychoanalysis.

It is still too early to evaluate this new contribution. The indications are that nondirective therapy is limited in its usefulness to intelligent patients who have some capacity to cope with life and are under sufficient tension to be motivated toward active cooperation in solving their problems. It is doubtful whether the method is suitable for hysterical and many neuroathenic patients who have "adjusted" to their symptoms.

Group Psychotherapy.—*Group psychotherapy* has been used by religious leaders since earliest times, but as a psychiatric ap-

proach it is of recent origin. The usual practice is to combine individual therapeutic sessions with group meetings. Initial interviews are on an individual basis. A life history is obtained and the patient is given whatever individual aid and instructions he may require before entering a group. Intelligence, cooperation, and absence of particularly objectionable traits are regarded by Hadden (6) as necessary requirements for admission. In addition, the patient's condition must not be so far advanced that he is incapable of reacting emotionally.

Classes consist of approximately 5 to 15 patients of the same sex. The actual management of the class varies with the therapist. Insofar as possible, the same therapeutic procedures used in individual interviews are adapted to group work. The psychiatrist acts as the group leader. Sometimes he gives lectures on the psychology of the neuroses and at other times he calls on volunteers or specific patients to discuss their symptoms, indulge in free association, or report a dream. The psychiatrist may interpret the material, bring it before the class for open discussion, or call on individual patients for their comments. The personality of the group leader is of considerable importance, since desire for approval of the leader promotes a spirit of rivalry making for maximum improvement. As the class continues, patients are encouraged to report progress and interpret each other's symptoms. In effect, they treat each other under the supervision of the psychiatrist.

The outstanding advantage of the group method is that it enables the therapist to treat many patients simultaneously. Since treatment of neuroses is a time-consuming process, this is an important consideration. There are other good points. On the basis of his experience with the method, Schilder (20, p. 201) writes: "It is obvious that an individual in such a group sees the fundamental identity of his problems with the problems of others. It takes him out of the isolation into which the neurosis has led him. The members of the group easily identify themselves with each other. The fact that one member of the group brings forward material which another very often tries to hide lessens the resistance and brings forward conscious as

well as 'unconscious' material. Frequently it is easier to see one's own problem when it is brought forward by another."

Preliminary reports indicate favorable therapeutic results. Several psychiatrists have been particularly impressed by the improvement occurring in obsessive-compulsive patients, who usually respond poorly to individual forms of therapy.

General Summary.—In conclusion, it should be emphasized that there is no one best psychotherapeutic technique. With the possible exception of exhortation, all the above procedures are useful and desirable in certain situations. When patients cannot afford prolonged treatment or when the symptoms are relatively mild, suggestion, explanation, persuasion, or advice may constitute the ideal method. In cases of simple amnesia, hypnosis is often the most effective tool. With intelligent patients, suggestion or advice may be less desirable than mental catharsis, psychoanalysis, or nondirective therapy. A further influencing factor is the personality of the clinician. A quiet, introverted counselor may have great success with psychoanalysis and nondirective therapy, but an energetic extrovert might find it impossible to assume a passive role, and his forte may be some active, directive form of therapy. In a few instances, special forms of therapy other than psychotherapy may be indicated.

OTHER FORMS OF THERAPY

Relaxation.—Some sufferers from excessive tension and insomnia may obtain symptomatic relief if they are taught how to relax physically and mentally. One method (9) consists in having the patient recline on a couch and intentionally contract and relax various muscles of the body in systematic fashion. In this way the subject gets the feeling of each state and gradually acquires voluntary control over his muscles so that he can relax the entire body at will. When the body is completely relaxed, tension disappears, and the patient finds it easier to go to sleep. The voluntary relaxation of the muscles may be supplemented by verbal suggestions on the part of the examiner to the effect that the patient is becoming drowsy and sleepy. Throughout the training period, the patient is encouraged to believe that in

the future he will be able to induce this relaxed condition by himself. A preliminary discussion of the physiological nature of tension and the effect of bodily states on mental symptoms is an important adjunct to this form of therapy.

Rest Cures.—S. Weir Mitchell (14) was one of the most vigorous advocates and the most successful practitioner of the theory of rest and isolation. He believed that psychoneurotics suffer from exhaustion and need complete rest in bed, rich food, and complete social isolation. His patients, mostly nervous, run-down women, were confined to bed, systematically overfed, and forbidden to do anything or see visitors. Under this regime many were cured, but as Ross (18) has pointed out, there is some question whether the improvement was directly due to the beneficial effects of rest, food, and isolation. Mitchell was a man of magnetic personality and many patients were undoubtedly influenced to get well by their complete faith in him. Moreover, he made extensive use of active therapy. He constantly pointed out to his patients the need for an active and useful life. Finally, his method of treatment made illness dull and uninteresting. In effect, some patients improved because the treatment was more boring and painful than the advantages gained by the presence of neurotic symptoms.

Rest and isolation are still utilized as therapeutic procedures, but cures are no longer as plentiful. A possible explanation is that most psychiatrists today are skeptical of the exhaustion theory of the psychoneuroses and their lack of confidence in the treatment is unwittingly transmitted to their patients. In an autobiographical note, Ross (18) states that when he first tried out the rest cure, he obtained very satisfactory results. Later he began to have some doubt concerning the exhaustion theory of the neuroses, and as his doubt increased, his cures decreased, although the treatment, apart from his skeptical attitude, was the same. Current psychiatric opinion is against rest cures except in obviously exhausted cases. Prolonged horizontal therapy encourages chronic invalidism and side-steps the basic causes for the neuroses.

Environmental Therapy.—An improvement in the patient's external problems sometimes encourages recovery. Divorce,

marriage, or simply leaving home may provide a therapeutic escape from a domestic situation. A change of employment, a promotion, or a successful financial venture may reduce friction with associates and restore self-confidence. A vacation away from an uncongenial social environment or overwhelming responsibilities often results in some temporary mental improvement. Another approach, and a difficult one, consists in alleviating external stresses by persuading relatives and associates to assume a more favorable and sympathetic attitude toward the patient in need of affection and attention, and, conversely, to adopt a sterner attitude toward the overprotected patient. The main objection against environmental therapy is that it is merely a temporary expedient. The patient remains unchanged and symptoms reappear with the return of external and environmental difficulties.

Hospitalization.—Of the more than 5,000,000 psychoneurotic individuals in the United States, only about 5,000, or a ratio of 1 to 1,000, are annually admitted to registered mental hospitals. The small per cent hospitalized is not surprising, since only the most severe cases warrant hospitalization. The milder ones visit clinics, consult physicians, psychiatrists, and psychologists, or seek help through religion, special faddist movements, and patent medicines. Many go untreated.

Hospitalization offers several advantages. The most important is that it permits treatment under ideal conditions. The patient is removed from the external world of strife and conflict and is placed in a sheltered, simplified environment that affords a temporary retreat from domestic, social, or business difficulties. This gives the patient an opportunity to concentrate all his efforts upon getting well. In place of the usual one to five hours of treatment a week received by the clinic or office patient, the institutionalized patient is under treatment twenty-four hours a day. Therapeutic psychiatric interviews are supplemented by a carefully balanced and supervised program of rest, occupational therapy, and recreation. Habits for healthy living are established that will permit the patient to carry on when discharged.

Living with other patients is also of therapeutic value. A patient is less apt to regard his condition as unique and hope-

less when he is surrounded by other patients in various stages of improvement. Group life further provides an opportunity for improving the deficient sociability of the neurotic. Living in close unity with other individuals all day and engaging in specially arranged group activities are important aids in fostering social poise, adaptability, and interest in others (1).

The one possible disadvantage of hospitalization is that the patient may become so dependent upon the sheltered, simplified institutional life as to be unwilling to reenter the grimmer external world and resume his responsibilities. It is not uncommon for neurotics to have relapses at the time of their scheduled discharge. This, however, is not so much a criticism of hospitalization as an indication of faulty psychological treatment. The final goal of all sound psychotherapy is to strengthen and prepare the individual to lead a happy and useful life in the world of reality.

PROGNOSIS

Resistance to Treatment.—It is often more difficult to cure a neurosis than a physical disease. The person suffering from some organic pathology usually derives no profit from his illness; he resents being sick, looks forward to recovery, and eagerly cooperates with the physician. Neuroses, unlike physical diseases, are not chance ailments. Neuroses appear when the individual is faced with some distressing problem that is beyond his capacity; the symptoms are essentially attempts at adjustment. Indirectly, the patient profits from his neurosis. It protects him from the basic cause of his difficulties and often offers many additional secondary gains in the form of attention, domination over the family, excuse for failure, and avoidance of responsibilities. Hence the patient is unwilling to be cured and cooperates poorly. Treatment is a constant struggle between the patient and the physician. Even when the patient's resistance against recovery is overcome or the situation changes so that the neurosis no longer serves any useful purpose, the prognosis may be unfavorable because the patient dares not recover too quickly. To do so might invite unfavorable comments from

his relatives and friends, for example, "I told you there was nothing wrong with you," or "It was all imagination." As a defense against these taunts as well as a balm for his self-esteem, it may be necessary for the patient to acquire some face-saving reason for getting well. Under such circumstances a pilgrimage to a distant shrine, consultation with a famous specialist, change of physician, or a vacation often produces remarkable therapeutic results.

Recovery Rate.—Prognosis is essentially good. Many patients recover spontaneously in the absence of any formal treatment, so that it is difficult to evaluate precisely the direct effect of any special form of therapy. Some representative recovery and improvement rates are summarized in Table II, which in-

TABLE II. PROGNOSIS IN THE PSYCHONEUROSES

Place of treatment and person reporting	Number treated	Per cent recovered or improved	Comment
Private practice (Yas-kin, 23)	100	82	Treatment from 2 weeks to 4½ years; varied psychotherapy
Tavistock Clinic (Luff and Garrod, 13)	500	83	Clinic treatment; majority given less than 20 interviews
New York Psychiatric Institute (Landis, 12)	119	87	Mean duration of treatment 6 months; varied psychotherapy
Stockbridge Sanatorium (Coon and Raymond, 1)	1,060	89	Mean duration of treatment about 1 month; private sanatorium; explanation, persuasion, and guidance
Maudsley Outpatient Department (Neustatter, 15)	50	91	Varied nonpsychoanalytic treatment on interview basis
Berlin Psychoanalytic Institute (Reported by Landis, 12)			Freudian psychoanalytic treatment; mean duration of treatment for completed cases
Total cases treated . . .	312	58	17 months
Total cases completed.	200	91	

cludes results obtained by following various forms of therapy in public mental hospitals, research and teaching institutes, private sanatoria, and clinics in the United States, England, and Germany. Similar therapeutic results have been reported by Janet (10) for some of the older forms of therapy. In round numbers, from 80 to 90 per cent of psychoneurotics recover or improve. In general, hysteria patients respond more favorably to treatment than obsessive-compulsive cases, and chronic patients have a lower rate of amelioration than recent cases. Place and length of treatment appear to be of negligible importance. Clinic patients do as well as hospitalized cases, and the recovery or improvement rate for public mental hospitals is as high as for private sanatoria. On the basis of total cases treated, psychoanalysis, the longest form of treatment, makes the poorest showing. However, this observation must be interpreted cautiously. Many patients turn to psychoanalysis only when simpler methods have failed, with the consequence that psychoanalysts tend to treat the more severe cases.

Later Adjustments.—A substantial number of neurotic patients who are discharged as cured or improved have subsequent attacks. As a rule, subsequent attacks are similar to earlier ones in severity and content. There is no evidence that patients become progressively worse with repeated relapses and finally become psychotic. As has been pointed out in an earlier chapter, the neurotic fluctuates between normal health and a neurosis. His chances of developing a psychosis are no greater than for the general population.

One year following treatment, Ross (17) found that 70 per cent of his cases could be classified as recovered or improved. After three years the number known to be well or improved had dropped to 50 per cent, and after five years the number had dropped to 40 per cent. In the group studied by Luff and Garrod (13), the proportion of ameliorated cases dropped from 83 per cent at the time of discharge to 60 per cent three years after treatment. In a follow-up study of anxiety patients some 10 to 12 years after treatment, Harris (7) noted that 31 per cent were well, 49 per cent were suffering from anxiety, 7 per cent had developed psychoses, and 13 per cent were dead. Denker (3)

followed, for a five-year period, the careers of a large number of psychoneurotic patients who had disability insurance policies. Forty-five per cent of the cases were terminated within one year, presumably as recovered or improved, and approximately three-fourths were terminated within two years. Ten per cent were still disabled five years after onset.

Suicide.—Threat or fear of suicide is a common psychoneurotic symptom, but the number of successful attempts is relatively small. Ross (17) reported 7 cases of suicide among 1,186 English patients. In this country, Coon and Raymond (1) noted 6 suicides among 1,060 psychoneurotic cases, and Denker (3) recorded 3 out of 707 cases. This places the rate at approximately 1 out of 185 patients. For the general population of comparable age the suicide rate is considerably lower.

Mortality Rate.—Psychoneurotics may wear out their families and friends, but they take excellent care of themselves. A study conducted by Denker (3) shows that their life expectancy is better than average. This is probably due to their constant medication, excessive self-pampering, avoidance of strenuous tasks, long vacations, and frequent rest periods.

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CHAPTER IX

PSYCHOANALYSIS AND RELATED SCHOOLS

FREUDIAN PSYCHOANALYSIS

The term "psychoanalysis" has three different meanings. It is, first, a school of psychology that emphasizes the dynamic, psychic determinants of human behavior, and the importance of childhood experiences in molding the adult personality. Secondly, psychoanalysis refers to a specialized technique for investigating unconscious mental activities. Finally, psychoanalysis is a method of interpreting and treating mental disorders, especially the psychoneuroses.

The cornerstone of psychoanalysis was laid in Vienna in 1893, and since that time "the house that Freud built" has undergone constant revision (12). New wings have been added and many old sections that have failed to stand the test of time have been discarded. The present summary is essentially limited to a review of Freud's basic formulations as they existed at the time of his death in 1939.

Dynamics of Behavior.—Freud (9) recognized two fundamental motivating forces: the constructive *life urges* and the destructive *death urges*. Drawing upon Greek mythology, he christened the life forces *Eros* and the death forces *Thanatos*. These psychic drives find physiological representation in the anabolic, or building-up, and catabolic, or destructive, processes of body tissues. The aim of the death urges is to injure, destroy, and kill, as manifested in hate, aggression, murder, and suicide. The life drives were further divided into two groups: the *ego drives* that subserve the organic needs of nutrition and self-preservation, and the *sex drives* that find expression in pleasurable and affectional pursuits.

Ego impulses play an insignificant role in Freudian psychoanalytic theory and are rarely mentioned. Major importance,

however, is attached to the sex and aggression drives, since their development and expression are thought to determine, in large measure, the happiness and mental health of mankind. Love and hate, as viewed by psychoanalysts, are not necessarily mutually antagonistic. Often the two are inseparably fused. In courtship there is often some quarreling, and loved persons are often hurt. Conflicting coexisting motives and attitudes of this nature are frequently encountered in psychoanalysis and are included under the heading of *ambivalence*.

The Freudian interpretation of motivation assumes that the energy generated by the body is channeled off into the various major life urges. These energized drives create tensions, consciously perceived as painful and unpleasant feelings, that impel the individual to engage in specific tension-reducing activities. The energy of the sex drive is called the *libido*, and tension produced by sex energy is best released through amorous activity. However, society places many obstructions in the path of sex, so that the libido is frequently denied normal or direct outlet. This creates a damming up of sex energy.

Release from the accumulated tension may be sought through sublimation, tension-reducing neurotic symptoms, or other means. Sublimation, the solution of normal individuals, consists in the directing of the sex energy into socially approved channels. Poetry, religion, music, art, work, and vigorous exercise are some common methods of sexual sublimation. Bottled-up hostile or aggressive energy finds outlet in similar fashion. The normal individual sublimates his aggression toward his enemies by digging a garden, chopping wood, or going hunting; the neurotic seeks release through symptoms.

The Freudian motivational system is further supplemented by certain guiding principles. The most important in childhood, and in the lives of some neurotic individuals, is the *Pleasure Principle*, characterized by a tendency to avoid pain and seek pleasure through immediate gratification of emotional needs regardless of future consequences. The sex drives are dominated by this principle. With greater maturity, the *Pleasure Principle* comes under the control of the *Reality Principle*—the “voice of reason” that encourages the temporary denial of im-

mediate pleasure to avoid subsequent pain. The Reality Principle is closely associated with the ego drives, and its goal is to adapt the individual to the moral, social, and physical requirements of the external world. The guiding rule of the death drive is the *Nirvana Principle*,¹ aimed at final return of living matter to the inorganic state.

Psychosexual Development.—*Psychosexuality*, involving the development and broad biological, social, and psychological manifestations of the sex impulse, forms the nucleus of psychoanalytic theory and treatment. Freud's psychosexual theories were the starting point of psychoanalysis. It was his emphasis on the perverse sexuality of children that originally provoked widespread distrust and vehement condemnation of psychoanalysis on the part of the general public, psychologists, and physicians. This adverse attitude still persists in many quarters.

Psychoanalysts recognize three principal stages in the sexual growth of the individual. The first, extending from birth to about age six, is the period of *infantile sexuality*; the second, from six to twelve, is the *latent period*; and the final, or *genital*, stage starts with puberty and extends through adolescence to maturity. A brief summary of these stages is given below. A more comprehensive analysis may be found in the writings of Freud (14) and his disciples (7, 15).

1. Infantile sexuality, birth to age six.

a. Oral stage. This consists of two phases, sucking and biting. During this *autoerotic* period, birth to age two, the libido is fixated on the physical self, and erotic pleasure is primarily derived from the sucking, swallowing, and biting movements of the mouth organs. The Pleasure Principle is overwhelmingly dominant.

b. Anal stage. During the ages one to four, the child is chiefly concerned with the satisfactions associated with his toilet habits. Pleasure is derived from expulsion and retention. Between the ages of two and four, the child becomes conscious of himself as an independent

¹ Nirvana represents in Buddhism the final release from life problems, attainable by freeing the soul from all attachment to the external world.

individual and proceeds to direct his libido upon himself as a psychological entity. This self-love is termed *narcism*. The Pleasure Principle is beginning to be controlled by the growing Reality Principle.

- c. **Phallic stage.** Between the ages of four and six, the sex energy or libido is localized in the genital organs. Infantile masturbation is fairly common. The libido object meanwhile shifts from the self to the parent of the opposite sex. This is the well-known *Oedipus complex*. Little boys fall in love with their mothers and dislike their fathers, and little girls love their fathers and hate their mothers. The latter daughter-father attachment is also known as the *Electra complex*. This peculiar parent relationship is soon dissolved in normal children. Under threat of castration, more implied than explicit, the child relinquishes all infantile sexuality. The Reality Principle is now well established.
2. **Latent stage, ages six through twelve.**
 - a. Coincident with the entering of school, the child renounces his earlier sex interests. Emphasis is now placed on intellectual growth and social and moral development. This is the age of high ideals, altruism, and prudence. Children at this time resent excessive parental display of affection but are fond of both parents. There is a decline in narcism.
 3. **Genital stage, ages twelve through maturity.**
 - a. Revival of infant sexuality. The onset of puberty in the early teens brings about a revival of the oral, anal, and phallic stages.
 - b. Homoeroticism. The period between twelve and fifteen is often marked by attachments to playmates and friends of the same sex. Girls develop "crushes" on each other and on their teachers. Boys form gangs, have special pals and heroes. These attachments rarely go beyond the platonic level. Youngsters at this stage are very egocentric, and their fondness for like-sexed individuals of comparable age may be partly an indirect form of self-love. Even more important is the fear of the oppo-

site sex. Preadolescent youngsters, somewhat confused by their strange erotic impulses, feel more at ease with members of their own sex and direct their revitalized libido toward them to avoid heterosexual embarrassments. One further factor is that society discourages opposite-sex attachments too early in life.

- c. *Heterosexuality.* Early adolescent love affairs are largely narcissistic and experimental. Boys and girls demonstrate their ability to attract the attention of members of the opposite sex and at the same time gain confidence in their sexual maturity. Serious love attachments involving a heterosexual exchange of libido appear in the late teens and early twenties. In the early phase of the genital period there is a marked revival of the Pleasure Principle, but the Reality Principle eventually regains the upper hand.

This description of psychosexual development was originally based entirely on the study of neurotic patients, but Freud and his followers have insisted that these findings apply equally well to normal individuals.

A further aspect of the psychosexual theory that has far-reaching significance for the understanding of human behavior is the assumption that many character and personality traits of normal individuals are derivations and continuations of infantile sexuality. Early oral eroticism, for example, is represented in later life by kissing, smoking, and gum-chewing. Lovers sometimes say, "I love you so much I could eat you," or they express their oral intentions more subtly by calling each other "sugar" and "honey." Hoarding, excessive cleanliness, pedantry, obstinacy, and petulance are regarded as derivatives of the anal stage. Individuals who select professions that put them in the spotlight, for example opera singers, teachers, and actors, demonstrate residual narcissistic or exhibitionistic tendencies. The shadow of the Oedipus complex is seen in the tendency for boys to marry girls who resemble their mothers and for girls to prefer men who have their father's disposition or physique. Women's

teas, and ciubs exclusively for men, imply a continuation of pubertal homoerotic inclinations.

Levels of Consciousness.—The mind, according to Freud (10), consists of three levels: the *conscious*, the *preconscious*, and the *unconscious*. These divisions are convenient abstractions rather than specific anatomical areas. Mental events and memories that the person is aware of at the moment constitute the conscious mind. The preconscious is the storehouse of surface memories and desires that are not conscious at the moment but are readily recallable. The unconscious is the repository of buried thoughts, emotions, and impulses that are not readily accessible to voluntary control. The contents of the conscious and the preconscious mind are internally consistent, temporally arranged, and adaptable to external events. The unconscious is timeless, chaotic, infantile, and primitive. It is the underworld of the personality that is unconcerned with reality or the rights and rules of society.

The contents of the unconscious come from two sources. A portion consists of primitive, pleasure-dominated, and somewhat brutal ideas and strivings that have never been conscious. They are part of the individual's inheritance. The second source consists of thoughts, memories, and wishes that were once conscious but have been repressed or pushed back into the hinterland of the mind because they were too shocking, painful, or shameful to tolerate. The return of this exiled material to consciousness is strenuously avoided.

Both types of unconscious material are denied direct access to our attention and conscious awareness because they would offend our finer sensibilities or wound our self-esteem. The unconscious, however, is not dormant. Like the turbulent and muddy undercurrents of a deep river, the unconscious exerts a profound effect on the composition and flow of the clearer waters above. Its presence is revealed by embarrassing slips of the tongue, thinly disguised phantasies and dreams, inner conflicts, and neurotic symptoms. Further evidence is obtained from the study of certain psychoses where the confining walls of the unconscious are shattered and its amoral and uncivilized contents are readily apparent in the ideas and actions expressed.

Personality Structure.—The personality is divided into three parts: the *Id*, the *Super-ego* and the *Ego* (10). The *Id* is the representative of the unconscious. It is guided entirely by the pursuit of pleasure and the avoidance of pain, and corresponds roughly to the popular conception of the beast in man. Like the unconscious, it is unorganized, timeless, and out of contact with reality. Logic has no place in the *Id*. Contradictory impulses may coexist side by side, with neither influencing the other. The *Id* is lacking in morals and ethical judgment, and it has no sense of social values.

The *Super-ego* is the equivalent of what is more commonly known as the "conscience." It is partly conscious but mainly unconscious and consists of inherited moral inclinations that have been intensified and modified by culturally acquired restraints, ethics, taboos, and ideals. To this segment of the personality is entrusted the enforcement of the moralities, prohibitions, and social standards implanted in the individual by his parents, teachers, and the social group.

The *Ego* is the "I" that thinks, feels, decides, and wills. It may also be defined as that part of the *Id* that has been converted to the Reality Principle by its proximity to the outer world. As the administrative officer of the personality it is mainly conscious, partly unconscious, and in contact with the *Id* and the *Super-ego*. The main functions of the *Ego* are (a) to satisfy the nutritional needs of the body and protect it against injury; (b) to adjust the wishes of the *Id* to the demands of reality; (c) to enforce repression; and (d) to coordinate the antagonistic strivings of the *Id* and the *Super-ego*. The *Id* is the energy source of the *Ego*, and the *Super-ego* is its moral censor.

One might compare the interrelationship of these three components of the personality to an automobile. The engine, or driving power, is the *Id*; the driver who keeps the car on the road is the *Ego*; and the back-seat driver is the *Super-ego*. In the discharge of its many duties, the *Ego* often becomes the battleground for conscious and unconscious conflicts. The interrelationship between the three parts of the personality and the basic drives is illustrated in Fig. 6.

Origin of Psychoneuroses.—Normal individuals solve their intrapsychic disturbances, often with the aid of some of the mental mechanisms discussed in Chap. III, in such a manner as to restore a harmonious balance between the various compo-

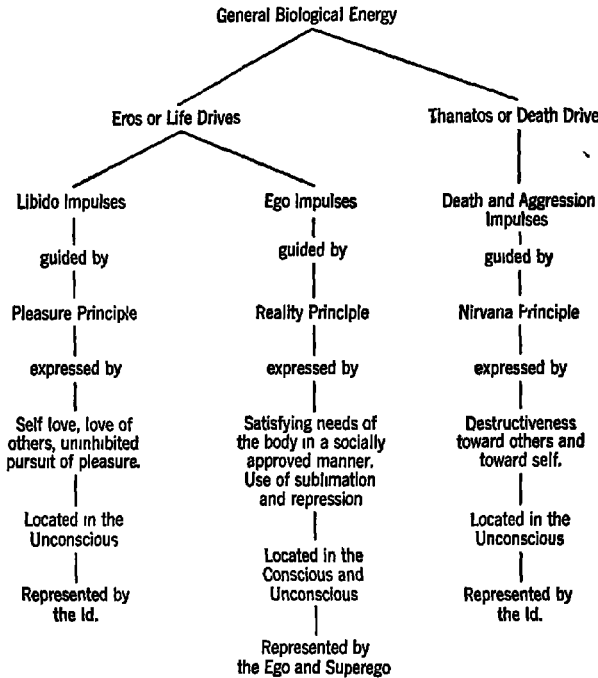


FIG. 6.—Schematic representation of some psychoanalytic concepts and their interrelationships.

nents of the self and the social and physical environment. In the psychoneuroses, the Ego remains in contact with reality but is threatened with loss of mastery over the Id and Super-ego. Neurotic reactions are emergency makeshift measures that permit some degree of mental adjustment at the cost of symptoms that are distressing and annoying to the patient, his associates, or both.

Freud's explanation of the origin of the neuroses has been ably summarized by Hendrick (15, p. 27), an American psychoanalyst.

Freud discovered that all factors contributing to a neurotic reaction are intimately associated with the sexual life of the patient, and the sexual life of his childhood as well as adulthood. In addition Freud has always recognized heredity as one of the etiological factors. Today, in psychiatric usage, "heredity" or "constitution" has actually come to be used chiefly to disguise ignorance, in that everything we cannot explain is ascribed arbitrarily to it. When we find that an environmental situation plays a role in a specific maladjustment, the role of heredity is less emphasized; the disclosure of adult traumata which have become unconscious still further reduces its significance, and the demonstration of infantile repressions do so still more. At this point, however, analysts are compelled to join their colleagues in assigning what is still inexplicable to hereditary causes. There is no reason to doubt that an individual with sufficiently inferior germ plasm cannot escape mental illness under any life conditions; but it is also apparent that individuals whose heredity and infantile experiences are not unusually unfavourable may be made neurotic by exceptional emotional strain.

In his classification of the neuroses, Freud (8) distinguished between what he called the "actual neuroses" and the "psychoneuroses." The actual neuroses, including neurasthenia and anxiety neurosis, were assumed to be of somatic or toxic origin resulting from disturbances in the sexual life of the adult. Sexual excesses, especially masturbation, were given as the cause for the fatigue symptoms of the neurasthenic. The unattached anxiety and vague fears of the anxiety neurosis were attributed to sexual abstinence, coitus interruptus, and other forms of sexual stimulation lacking in adequate gratification.

The three psychoneuroses—conversion hysteria, anxiety hysteria, and obsessive-compulsive neurosis—were regarded as primarily of psychogenic origin (11, 13). Overt symptoms may appear at any age, but all three neuroses arise from an inadequate solution of the Oedipus complex. Anxiety, resulting from fear of castration, forces the Ego to repress infantile sexual and aggressive impulses. Conflicts in later life reinstate this early

anxiety. To protect itself against a threatened breakdown of repression with the return of conscious anxiety and conscious guilt, the Ego in desperation resorts to defensive or escape reactions in the form of neurotic symptoms.

The mechanism underlying symptom formation in conversion hysteria is not clearly understood, but in some way the repressed affect and Id strivings are converted into physical symptoms, for example headaches, contractures, and paralyses. Brown (7, p. 366) offers the following explanation:

The fear of the consequences of the Oedipus attachments leads to the repression and a resultant denial of all sexuality. The physiological sexual ripening at adolescence can find no natural outlet because of the fear of the consequences of all sexuality. Thus sexuality is denied and the libidinal energy is converted into the symptoms of physical disease. . . . The struggle of the hysteric is always over a conflict between heterosexual urges and a fear of the consequences of these. . . . The symptoms serve as a denial of the causes of the anxiety.

Conversion hysteria profits the patient in two ways. The *primary gain* is the reduction of anxiety and the avoidance of the unconscious sexual conflict. The disabling symptoms also permit a retreat from other disagreeable life difficulties and have considerable sympathy-getting value. This is the *secondary gain*.

In anxiety hysteria, the anxiety is overtly manifested and acknowledged, but the internal danger, namely a fear of one's libido, is transformed into phobias or external fears of the environment. Fear of open places, closed places, high places, and animals are typical symptoms of anxiety hysteria. These fears protect the individual against possible exposure to situations and objects which, because of their associations, might revive repressed infantile conflicts concerned with the Oedipus situation. Secondary symptoms may include diffuse anxiety, irritability, insomnia, tachycardia (accelerated heartbeat), and vasomotor disturbances.

Obsessive-compulsive symptoms represent prohibitions against, atonements for, or disguised gratifications of inadequately re-

pressed sexual or aggressive impulses. Here the libido has regressed from the Oedipus situation to the pregenital anal-sadistic stage. The conflicts of the obsessive-compulsive patient center about his homosexual versus heterosexual and his love versus hate impulses. The primary purpose of compulsive ceremonials is to forestall or prevent the repetition of some specific thing, and the secondary intention is to undo the anxiety-creating event of the past. Another defense technique peculiar to compulsive neurosis is that of *isolation*. The traumatic experience is isolated from its affect and its associated connections, so that it is not readily accessible to recall.

In view of the tremendous importance assigned by Freud to infantile sexuality in the production of psychoneuroses, it might be expected that the childhood sexual experiences of neurotic individuals differ significantly from those of normal persons. However, this is not the case. Upon inquiring into the early childhood of normal individuals, Freud (8) made the startling discovery that the sexual histories of their childhood did not differ essentially from the infantile life of neurotics. To explain this apparent weakness in his theory he reasoned that the critical point was not the experiences themselves but the individual's response to them. Neurotics repress their infantile sexual experiences, normal individuals do not.

A somewhat similar conclusion has been reached by Landis (23). In a careful study of the psychosexual development of normal and neurotic women, Landis found that the latter do not report particular experiences that differentiate their psychosexual history from that of the normal group but that they react to these experiences more strenuously. The responses of neurotic women are characterized by greater emotional nonadaptiveness. Their psychosexual growth is difficult and retarded, and heterosexual adjustments in marriage are marked by inadequacy and immaturity. This raises an interesting question. What causes the neurotic to repress or react to psychosexual experiences with greater emotional nonadaptiveness? For the present, at least, some inherent constitutional predisposition must be assumed.

Treatment.—Psychoneuroses result because the Ego is too weak to reconcile and control the claims and demands of its three masters, the Id, the Super-ego, and the external world. The aim of psychoanalytical therapy is to strengthen the Ego by having it reclaim new portions of the Id and making it independent of the tyrannical Super-ego. As stated by Allport (6, p. 182): "If psychoanalysis can widen the Ego's field of vision, so that it is able to take over into the unified region of consciousness many hitherto hidden portions of the Id, reconciling them in the process with the demands of the Super-ego and the outer world, the patient will then face life more serenely, and his neurotic difficulties will presumably vanish." In effect this means that repressed experiences and strivings must be brought to the patient's attention. This is a difficult task, however, since the painful and disagreeable nature of the unconscious material prevents direct recall and assimilation. The task of the psychoanalyst is to break down the protective wall of repression and open the floodgates of the unconscious, but in such a way that the patient will not be overwhelmed by the experience.

Several excellent descriptions of psychoanalytic treatment from the analyst's (22, 26) and the subject's (24) point of view have been reported. During the initial interview, the analyst obtains an account of the patient's symptoms. He then informs the patient that if he wishes psychoanalytic treatment he must come one hour a day, five days a week, for a period of from one to three years. The average length of treatment is about 18 months. The question of fee is also decided at this time. The usual fee is between five and ten dollars an hour, and this fee must be paid regardless of whether the patient keeps his appointment. Psychoanalysts insist on punctuality and payment of a high fee on the grounds that the patient will not profit from treatment unless it "hurts."

If he accepts treatment, the patient is advised not to discuss his case with others, to refrain from reading books on psychoanalysis, and to abstain from sexual intercourse. In the orthodox analytical session the patient relaxes on a couch and the psychoanalyst sits at the head of the couch in such a position that he can observe the patient without being observed himself.

This permits the analyst to note emotional reactions on the part of the patient, and prevents the patient from observing the analyst's reactions.

In the early stages of the analysis the patient usually describes his past life, his fears, hopes, sexual experiences, ambitions, and difficulties. When this source of surface material is exhausted, he is encouraged to let his thoughts wander and report whatever comes to mind regardless of its nature, whether trivial, moral, ethical, or personal. This spontaneous reporting of random thoughts in disconnected form is the technique of *free association*, the essential tool of psychoanalysis. Through free association, elusive fringe memories, impulses, and phantasies that would normally be immediately pushed back from consciousness are permitted overt expression.

A second basic tool for probing the unconscious is the interpretation of dreams. Dreams mirror unconscious conflicts, express repressed wishes, and have been called by Freud "the royal road to the unconscious." During sleep, the Ego is less vigilant, and repressed thoughts may enter consciousness in the form of dreams. However, vigilance is not completely relaxed, and so the dream content must be disguised to prevent waking the sleeper. The external disguise, the *manifest content*, that the dreamer recalls on awakening has limited psychological significance. To understand the true meaning it is necessary to examine the *latent content*. This is done by having the patient give his free associations to various items in the manifest dream.

After several hours of analysis, resistance is generally encountered. This may take several forms. The patient runs out of associations, stops dreaming, talks about inconsequential things, calls the analyst names, cancels appointments, or claims that he is cured. Diffuse anxiety may precede this stage. Resistance indicates a growing awareness on the part of the patient of his unconscious conflicts. Rather than face them, confess his secrets, and risk the loss of his protective symptoms, the patient seeks to terminate the analysis. It is the function of the analyst to explain these resistances and urge the patient to overcome them.

In a successful analysis, an emotional arrangement roughly analogous to a child-parent attachment develops between the

patient and the analyst. This *positive transference* is of great therapeutic value since it permits the patient to overcome his resistances and freely confess and express his repressed infantile sexual experiences. During this stage, the analyst becomes one of the most important persons in the world for the patient. Usually the analyst is regarded as an omnipotent parent substitute who understands all, forgives all, and knows all the answers. In some instances he becomes the lover substitute. This is especially apt to occur with women patients and male analysts. Before the completion of the analysis, the transference relationship must be dissolved so that the patient is no longer dependent upon the analyst.

The attitude of the analyst toward the patient is an important factor. For therapeutic as well as ethical considerations he must avoid *countertransference*, or becoming emotionally attached to his patient. If he becomes too personally interested in the welfare of his patient, the patient will often take advantage of the situation and thwart all therapeutic efforts.

During treatment sessions the patient generally does more than 95 per cent of the talking. The role of the analyst is that of an understanding friend who patiently and calmly listens to the fears, misdeeds, hopes, sins, and conflicts of the patient. He makes no attempt to convert, punish, or inspire the patient. His function is merely to help the patient to self-understanding by making him fully aware of his Id and Super-ego strivings and the demands of reality. In this capacity, the analyst will occasionally correlate material reported, point out causal relations, and offer possible interpretations. The extent of interpretation depends on the progress of the analysis and the ability of the patient to handle the material at the moment. Above all, the analyst acts as a convenient symbol, enabling the patient to work out his loves, hates, and fears. The patient identifies the analyst with individuals he has loved, hated, or feared in the past and utilizes his presence to work out these emotional relationships.

The analysis is terminated whenever the patient thinks he has had enough or when the psychoanalyst decides the patient is incurable or has acquired sufficient insight and mastery over his

difficulties to be able to carry on unassisted and relatively free of symptoms.

Psychoanalysis and Religion.—There is a striking similarity between psychoanalysis and the basic tenets of many religions. According to psychoanalysis, man is by nature bad and must be educated to be good. There is the usual conflict of the good, or the Super-ego, and the evil, or the Id, with the Ego torn between them. The evils remain the same—lust, or the libido; self-love, or narcissism; and hate, or aggression. The psychoanalyst is the high priest, the ancient interpreter of dreams. Finally, salvation is obtained through ritualistic confession, or catharsis.

EVALUATION OF PSYCHOANALYSIS

General Concepts.—Although relatively few psychologists accept all of Freud's statements at face value, most psychologists and an even greater number of psychiatrists acknowledge the greatness of Freud as a brilliant thinker and, without necessarily agreeing with him, recognize the importance of many of his contributions. Whether fact or interesting speculation, Freud's views on early sexual development, the dynamics of unconscious conflicts, dream interpretation, and the role of repression and sublimation have profoundly influenced research and thinking in psychiatry and psychology. The impact of psychoanalysis has also been felt in sociology, anthropology, literature, and painting.

Because of the complexity and subjective nature of many of Freud's concepts, attempts to check their validity by scientific experimentation have not been very successful. In a comprehensive survey of objective studies of psychoanalytic principles, Sears (25) noted both confirmation and refutation. Nonanalytic sources of information support Freud's descriptions of the oral and anal stages of infantile sexuality but reject his concept of the universal Oedipus complex. The Oedipus complex is based on the faulty assumption that there is a fixed, uniform pattern of family life. Actually, a variety of parent-child relationships may exist in different families, and what attitudes a child will

develop toward his parents depend on his particular family situation.

In general, Freud's comments on repression, projection, and dream analysis have also received favorable support from experimental studies. However, as is pointed out by Sears, the existence of some agreement between psychoanalytic theories and experimental observation does not necessarily mean that the theories are true. All that is established is that the facts agree with the Freudian theories, but other theories might provide as good or better explanations. In the field of physics, for example, many theories which were once thought to be true because they agreed with experimental facts have been discarded and replaced by sounder theories that also fit the same facts. The unwillingness of most psychologists to accept psychoanalysis fully has been explained on the grounds that Freudian concepts are based on subjective, nonscientific techniques that have no self-evident validity. It may be that some psychologists have been too critical of psychoanalysis, but until Freud's theories are more adequately checked by carefully controlled experiments, there is ample justification for seriously questioning at least some of his conclusions.

Classification of Psychoneuroses.—Freud's distinction between the actual neuroses and the psychoneuroses has not been accepted, but his writings have popularized the diagnostic terms "conversion hysteria," "obsessive-compulsive neuroses," and "anxiety hysteria." They have indirectly contributed to the decline in usage of such terms as "psychasthenia" and "neurasthenia."

Theory of Psychoneuroses.—Psychiatrists who are daily engaged in the treatment of psychoneurotic patients are naturally the best judges of the accuracy of the psychoanalytic interpretation of the neuroses. Only a small minority are enthusiastic supporters. The great majority acknowledge the importance of psychosexual disturbances in selected cases but vigorously deny that all psychoneuroses have a sexual foundation. It is significant that several of Freud's more capable early associates, especially Adler and Jung, withdrew from the psychoanalytic movement because their own clinical observations failed to con-

firm the stellar role of repressed infantile sexuality in the etiology of the psychoneuroses. Their theories will be discussed later in this chapter. More recently, Karen Horney, a prominent psychoanalyst in this country, has taken issue with the orthodox Freudian interpretation of the neuroses and has attracted a substantial following among former disciples of Freud.

Karen Horney's Theory.—Horney (16, 17) has retained the concepts of repression and unconscious dynamic forces but has rejected the theory of the libido and Freud's biologically oriented point of view that the basic conflict in psychoneuroses is between man's inherent sexual and aggressive drives and the repressing forces of the Super-ego and society. According to Horney, psychoneuroses are brought about by cultural factors and are generated by disturbances in human relationships. Although acknowledging the prime significance of early childhood experiences in molding the neurotic personality, she also recognizes the importance of conflicts in later life.

Approaching the problem genetically, she points out how a child early acquires feelings of isolation and insecurity as a result of exposure to such adverse environmental influences as absence of affection, parental domination, and overprotection. In attempting to get along in a potentially hostile world, the child may (a) move toward people and obtain security and a sense of belonging by being submissive and dependent; (b) move against people and aggressively fight his way in the world; or (c) move away from people and live in an isolated private world. Normal people combine and integrate these three attitudes and thus achieve a balanced, unified personality.

For reasons not disclosed by Horney, the neurotic has a rigid personality and is unable to achieve this unity, with the consequence that these contradictory attitudes remain irreconcilable. Horney maintains that it is this conflict between contradictory and incompatible attitudes that constitutes the basic core of neuroses. The important point is not the presence of a conflict but the nature of the conflict. Normal people frequently have conflicts, but these are concerned with an actual and voluntary choice between two desirable possibilities, for example whether to marry or to go to graduate school. The neurotic, engulfed in

a conflict, is driven by equally compelling forces in opposite directions, and he has no choice in the matter. Thus a girl who desires to marry may shrink from all male advances, or a student may be torn between a desire for friends and a dislike of people. The aim of therapy is to resolve these peculiar conflicts by changing those conditions within the personality which have brought them into being. This is done by utilizing the standard time-consuming Freudian psychoanalytic techniques.

Treatment.—The practical applicability of psychoanalysis as a method of therapy for the psychoneuroses is extremely limited. One significant restricting factor is the high cost. Only patients who have at least \$2,000 to invest in their neuroses are eligible for thorough treatment. A second and related restriction is the time factor. Since each patient is seen one hour a day, five days a week, for an average period of 18 months, a hard-working psychoanalyst can treat completely only about five patients a year. In an effort to overcome these major handicaps of time and expense, a few psychoanalysts (5, 26) have experimented with a somewhat shorter form of psychoanalytic therapy.

For the same reasons, others (27) have advocated the use of hypnoanalysis as a means of speeding up the formal analytic treatment. *Hypnoanalysis* has been described as a psychoanalysis performed in a controlled setting. The proponents of this approach claim that it is possible to shorten materially the time required for a psychoanalysis by using hypnosis to facilitate the establishment of transference and to decrease the patient's resistance to the recall of repressed unconscious material.

In hypnoanalysis, the patient is seen five or six times a week for a few months. The first 15 minutes of each hypnoanalytic session may be devoted to orthodox free association. The patient is then put in a deep trance and given various suggestions to stimulate the recall of repressed or early experiences. The analyst may ask the hypnotized patient to report free associations, relate suggested dreams, relive and reenact emotional scenes, report what he sees in a crystal ball, and so on. In brief, the analyst acts as a guide leading the hypnotized patient through a maze of unconscious material.

Information obtained during hypnosis is interpreted and discussed while the patient is still in the trance state, since he may be unable to handle the material when awake. However, there is some carry-over into the waking state, so that the patient indirectly profits from this material and, at his own rate, gradually arrives at understanding and insight. Periodically, hypnosis is suspended and the standard psychoanalytic procedures are used. It is still too early to evaluate the significance of this modified form of psychoanalysis.

A third limitation of psychoanalysis is that it is not effective in many cases. Psychoanalysts (15), as well as their critics (21), have noted that for favorable results the patient must be intelligent, between twenty and forty years of age, and generously endowed with strength of character. But if a patient has all these personality assets, it would be reasonable to presume that he would respond favorably to shorter and less expensive forms of therapy.

The claim of psychoanalysts that their technique is more effective than simpler procedures is difficult to prove or disprove. This is mainly due to the fact that very few therapists have reported in detail the results of their particular forms of therapy. A review of most of the available data on this point is presented in Table II, p. 175. It will be observed that psychoanalysts have reported recovery or improvement in less than two-thirds of total patients treated and in four-fifths of completed cases. Other investigators, employing a variety of nonanalytic procedures, have also reported recovery or improvement in from two-thirds to four-fifths of psychoneurotic cases.

It would appear from these figures that psychoanalysis is no more effective than other much simpler techniques. However, before this conclusion can be accepted as a definite fact, it must be established that (a) the cases treated by psychoanalysis were of the same type and severity as those treated by other techniques and (b) that an equal proportion of patients treated by analytic and nonanalytic procedures remained cured for some stated period following treatment. Until these factors are controlled, no final decision can be made with respect to the relative effectiveness of psychoanalytic treatment.

Freud's Own Views.—The best evaluation of psychoanalysis has been offered by Freud himself. He regarded many of his concepts as interesting theories rather than established facts. For example, in discussing his theory of the life and death drives, he stated (9, p. 76): "I might be asked whether I am myself convinced of the views here set forward, and if so how far. My answer would be that I am neither convinced myself, nor am I seeking to arouse conviction in others. More accurately, I do not know how far I believe in them." On another occasion he wrote (12, p. 144): "Looking back, then, over the patchwork of my life's labors, I can say that I have made many beginnings and thrown out many suggestions. Something will come of them in the future. But I cannot tell myself whether it will be much or little."

INDIVIDUAL PSYCHOLOGY

Adler's Basic Concepts.—Alfred Adler, an early associate of Freud, eventually broke with Freud and established his own school of *Individual Psychology*. Adler objected to the fundamental Freudian views that the sexual libido is the principal motive force in life and that neuroses result from repressed infantile sexual wishes and phantasies. He maintained that the principal motive force in life is a striving for superiority and power. Masculinity, owing to the privileges invested in males in our civilization, is regarded as synonymous with superiority. The fundamental human wish is to be a complete man. Femininity, by contrast, is a sign of weakness and inferiority. Girls and boys doubtful of their masculinity may strive to compensate for their lack of masculinity by an exaggeration of what they imagine to be masculine behavior. This *masculine protest* is characterized principally by a needlessly domineering attitude toward the opposite sex.

The universal striving for superiority is essentially a compensation for basic feelings of inferiority and insecurity that are traceable to the early environment and the physical constitution of the individual. The helpless and impotent infant, surrounded by *gigantic, powerful adults*, learns the meaning of in-

feriority while still in the crib. Some factors that accentuate inferiority feelings and predispose children to neuroses are physical defects, overprotection, and rejection.

In his earlier writings, Adler (1) placed primary emphasis upon organ inferiority and its mental compensations. Children who are or who imagine that they are undersized, sickly, deformed, or physically handicapped attempt to correct for their organic infirmities by *overcompensation* in the psychological sphere. Short people, for example, are usually aggressive.

In his later books, Adler (2, 3) has called attention to various intrafamilial situations that encourage feelings of inadequacy and fear of failure in children. Pampered and unloved children are especially subject to discouragement and feelings of inferiority. The former, praised and idolized beyond all reason by their parents, are ill prepared for the disappointments and loss of attention and prestige that they will encounter when they compete on equal terms with the outside world. Rejected children start life knowing that they are unwanted, inferior beings unworthy of being loved. Position in the family is a further accentuating factor. Young children compare themselves unfavorably with their older and more capable siblings. They are always behind and are under great pressure to catch up. Similarly, children of famous men regard as hopeless their chances of living up to the high standards set for them by their fathers. They are defeated before they start.

Style of Life.—Early in life, usually by the fifth year, each child creates for himself a fairly permanent *style of life*, designed to overcome his feelings of inferiority and assure success in the three fundamental challenges of life: adjustment to society, vocation, and love. Normal individuals select life goals that permit effective and socially useful adjustment to the main tasks of life even at the cost of occasional risk or failure. They have a well-developed social feeling, attained largely through favorable contact with the mother in childhood, which makes them cooperative and helpful friends, good workers, and true partners in love. Organic defects and inferiority feelings serve to stimulate normal people to greater effort and achievement. Superiority is achieved as a reaction to weakness. Striking illustra-

tions are Franklin D. Roosevelt, who, though crippled by poliomyelitis, became President of the United States, and Beethoven, who composed some of his most beautiful music after he had become deaf.

Psychoneuroses.—The leitmotiv of all neuroses is a profound sense of discouragement and inferiority. The goal of the neurotic, like that of the normal, is one of superiority; but the neurotic, overwhelmed by the fear of possible failure in his social, vocational, or love relationships, selects fictional or abnormal goals that guarantee easy but empty victories. Neurotic individuals are deficient in social feeling, and their *style of life* is egocentric, parasitic, and lacking in social value. To avoid current or future failures that would injure their sensitive self-esteem, they develop protective symptoms which safeguard them against the threat of failure and which at the same time give them a false sense of superiority.

Neurotic illness is utilized to excuse failure, to gain the attention and services of the social environment, to lessen outside demands, and to exaggerate meager achievements. The neurotic can always say, "You must be nice to me because I am sick," or "I would have succeeded if it had not been for my nervousness," or "Just think how much more successful I might have been if I didn't have these symptoms." Since the neurotic dare not engage in any activity that may result in failure, he adopts a cautious "yes-but" attitude toward all life tasks. "I would like to go to college or get married, *but . . .*" He is not always fully conscious of his supposed or real inferiorities and usually fails to appreciate the causal relationship between his defects and his compensatory neurosis until the association is made evident during treatment (3, 4).

Treatment.—Adlerian treatment is direct and simple. There is no problem of investigating unconscious conflicts, because both the conscious and the unconscious are complementary and cooperating parts of one and the same entity. The conversation method is used, and the physician-patient relationship is one of "benevolent comradeship." The aim is to reeducate and socialize the individual and to restore his self-confidence.

The first step is to discover the patient's style of life, the par-

ticular goal of superiority he has chosen for himself. This is done by inquiring into his past life, his likes and dislikes, ambitions and fears, hobbies and social habits, inferiority attitudes, and organic defects. Dreams and incidental mannerisms also supply valuable information. Dreams reflect current and future unsolved problems and their possible solutions. The patient's ways of standing, talking, and shaking hands often indicate his chosen life role.

After the style of life and the purpose served by the symptoms have been ascertained, the second step is to guide the patient to an understanding of the true nature of his fictional goal and the meaning of his symptoms. The therapist, playing the role of a sympathetic big brother or parent, points out to the patient the error of his ways. Instead of approaching the three major life problems in a realistic and socially useful manner, he has sought by subterfuge to dominate the environment and evade his responsibilities. To be cured, he must give up his fictional lofty goals and be content with real success at a more moderate level. He must forsake his futile, egocentric pattern of life, cultivate a community spirit, and direct his efforts and interests into socially useful channels.

The therapist assists the patient to make this reorientation to life by offering helpful suggestions and encouragement, but he carefully refrains from exhibiting too great an interest in the patient's recovery, since to do so would give the patient the upper hand. He may refuse to get well to prove his superiority over the physician, another empty victory. During the treatment, resistance and transference are sometimes encountered, but they are not interpreted in Freudian fashion. The patient derives considerable value from his symptoms and hence resists treatment. If cured, he will have to assume responsibilities and engage in activities entailing possible defeat. Transference is merely another way in which the patient tries to dominate the physician by pretending to fall in love with him.

Evaluation.—Both as a system of psychology and a therapeutic technique, Individual Psychology is a rational, common-sense approach that is easy to understand. However, its very simplicity is its greatest weakness. Some personality maladjust-

ments, especially in children, are best explained and treated by this method; but it is most improbable that all conflicts and neuroses are reducible to the simple formula of striving for superiority and masculinity to compensate for underlying inferiority and femininity. In this country, Adlerian psychology has appealed to educators more than to physicians, and Freudian psychology has made greater inroads in medicine than in education.

ANALYTICAL PSYCHOLOGY

Jung and Freud.—The *Analytical Psychology* of Jung, a Swiss psychiatrist, is a mixture of keen empirical observation, mysticism, and religion (19, 20). In the early days of psychoanalysis, Jung, like Adler, was closely associated with Freud. After playing a leading role in the psychoanalytical movement for several years, he withdrew from the Freudian group and founded his own school. His explanation for this action was that he could no longer share the Freudian emphasis upon the sexual libido. Jung deviated much less than Adler from the Freudian school. He retained many of the orthodox principles, including the concept of the unconscious, the role of repression in the production of neuroses, and the use of free association and dream analysis in treatment.

Desexualized Libido.—Jung maintains that human behavior is dominated neither by the all-powerful sexual libido of Freud nor the mastery drive of Adler. There is only undifferentiated *life energy*, which at one time expresses itself in the pursuit of sensual pleasure and at another time in the striving for superiority, artistic creation, play, and other activities. In rather ingenious fashion, he attempts to reconcile the views of Adler and Freud on the basis of his personality-type theory (18). The extrovert, whose interests lie outside the self and who is socially promiscuous, is more apt to be guided by the pleasure principle; whereas the socially ill-adapted, introspective, more self-centered introvert finds greater satisfaction in the quest for power and prestige.

Racial Unconscious.—Like Freud, Jung recognizes a conscious and unconscious mind. The conscious portion, called the *Per-*

sona, corresponds to what Freud has called the Ego. The unconscious consists of a personal unconscious and a collective or racial unconscious. The personal unconscious contains the repressed experiences of the individual. Included in the collective unconscious are primitive or archaic ways of acting and feeling that are inherited by the individual and hence are colored by his racial background. The collective unconscious is not an aggregate of specific inherited ideas. All that is inherited is a structure of brain that functions selectively along certain lines, namely, along primitive and animistic channels. According to Jung (20, p. 144): "Every civilized human being, whatever his conscious development, is still archaic at the deeper levels of his psyche. Just as the human body connects us with mammals and displays numerous relics of early evolutionary stages, so the human psyche is likewise a product of evolution which when followed to its origins shows countless archaic traits."

In support of the theory of the racial unconscious, Jung refers to the bizarre delusions and hallucinations of the insane, the dreams of normal people, and the widespread belief in superstition and magical influences. During periods of mental illness, the thinking of modern man tends to be of a prelogical, primitive nature. Chance becomes calculating design. When a paranoid patient hears a stranger cough as he enters the room, he believes that the cough is a prearranged signal of his persecutors. It is not uncommon for schizophrenic patients to claim that people in distant places are reading their minds or forcing them to commit certain acts by the use of the evil eye or other supernatural influences. During sleep, when lower levels of consciousness are permitted greater expression, the contents of our dreams are as unreal, illogical, and bizarre as the thoughts of primitive man. We converse naturally with animals, fly through the air with ease, and destroy our enemies by a simple gesture. In spite of present-day sophistication, many of us are prone to attribute our misfortunes to having had a black cat cross our path. We do not hesitate to ward off evil spirits by good-luck charms of all varieties, and the bravest sometime hesitate to walk under a ladder.

For Jung, the unconscious is not the black underworld of lust,

savagery, and perversions. The fact that the unconscious is primitive does not make it a wild beast. From a moral point of view, the unconscious is perfectly neutral. In terms of Freudian terminology, the unconscious, according to the tenets of Analytical Psychology, is a balanced mixture of Id and Super-ego impulses.

Psychoneuroses.—In his explanation of neuroses, Jung utilizes the concept of psychological equilibrium. Like other psychic processes, neuroses are attempts, unfortunately inadequate, to adjust to some disturbing situation. Neuroses arise from a clash between a requirement for adaptation and the individual's constitutional inability to meet the challenge. The two main sources of conflict are antagonism between man's sensual and spiritual aspirations and discord between conscious and unconscious impulses.

Jung stresses the importance of repressions and inhibitions in the formation of neurotic symptoms, but he disagrees with the Freudian theory that these repressions are essentially associated with infantile sex phantasies. The repressed experiences contain memories, wishes, fears, needs, or views with which we have never really come to terms. For this reason they constantly disrupt our conscious life. They indicate the unresolved problems of the individual, the points at which he has suffered defeat and where there is something he cannot evade or overcome. These buried complexes that have been dissociated from consciousness and relegated to the hinterland of the unconscious give rise to neurotic symptoms as long as they are denied access or full expression in consciousness.

This explanation is fairly similar to that offered by Freud, but Jung is of the opinion that it applies only to young patients. The essential factor contributing to neuroses in older patients is the absence of a spiritual or unifying philosophy of life. According to Jung, psychoneurotic patients over thirty-five have lost that which the living religions of every age have given to their followers. Their basic struggle is to find a religious outlook on life, without which there can be no real cure.

Treatment.—There are four principal stages in the treatment of the neuroses: confession, explanation, education, and trans-

formation. Confession involves more than a mere recital of the individual's buried memories. The catharsis must be at the emotional as well as the intellectual level. The patient must completely unburden himself of his repressions and give relief to his suppressed emotions. To assist the patient in the exploration and clearing of his unconscious, the therapist employs free association and dream analysis.

Jung has made a substantial contribution to the technique of free association, namely, the word-association test (19). This consists of a list of 100 words purposely chosen for their potential emotional significance. The therapist states a word and requests that the patient give the first association that comes to mind. A record is made of the reported association and the speed of reaction. Words that have special affective meaning for the patient elicit atypical responses. Atypical or significant responses include failure to respond, answering too quickly or too slowly, giving some unusual association, or reacting emotionally. Further study of these critical or emotionally charged words by means of regular free association often facilitates the localization of the patient's complexes. The word-association test is also useful in demonstrating the existence of unconscious forces to incredulous patients. Confidence in the therapist and his mode of treatment is more easily established after a patient has experienced a two-minute mental block to an emotionally toned word.

The dream, as the voice of the unconscious, receives careful attention. Jung believes that dreams may have several meanings. They may be an expression of suppressed wishes of the past, a manifestation of present conflict, or a foreshadowing of things to come. Jung tends to favor the theory that dreams are prophetic views of the future. One of his women patients reported a series of dreams that were concerned with the need of crossing a frontier which was hard to locate and difficult to cross. Subsequently she dreamed that she had crossed the frontier and was in the customhouse. She had only her handbag with her and believed that she had nothing to declare. However, to her astonishment, the custom officials pulled two full-sized mattresses

from her bag. A short time later, the woman married—but with great resistance (20).

As treatment continues, the analyst explains to the patient the nature of the material that has been freed from the unconscious and encourages him to analyze his own dreams and passing thoughts. He is even urged to paint his phantasies. In keeping with his conception of the collective unconscious, Jung points out to the patient how his dreams and associations are related to primitive psychology, mythology, archeology, and comparative religions. If transference occurs, this also is explained to the patient, and he is urged to give up his childish dependence upon the analyst and strive to be emotionally independent. The aim of confession and explanation is not merely to expose and interpret the contents of the unconscious. There must, in addition, be a conscious assimilation of the unconscious material. The barriers separating these two realms of mind must be destroyed so that free communication will exist between them.

The third stage is to educate the patient as a social being. He must be given a new outlook on life. Young neurotics must be taught to stop running away from reality, and the old must be persuaded to surrender their fight with time and accept death. On the latter point Jung says (20, p. 129): "I am convinced that it is hygienic to discover in death a goal towards which we can strive, and that shrinking from it is something unhealthy and abnormal which robs the second half of life of its purpose. I therefore consider the religious teaching of a life hereafter consonant with the standpoint of psychic hygiene. When I live in a house which I know will fall upon my head within the next two weeks, all my vital functions will be impaired by this thought; but if on the contrary I feel myself safe, I can dwell there in a normal and comfortable way."

Transformation is a more subtle stage. It involves adapting treatment to the specific needs of the individual by having the therapist face the same task he wishes the patient to face. In order to transform the patient into the type of man the therapist thinks he should be, the therapist must also reeducate himself in the same direction and by his own example effect the desired change in the patient.

Evaluation.—Jung estimates that two-thirds of his patients have passed middle life and that one-third are suffering not from clinically definable neuroses but from the senselessness and emptiness of their lives. They are in the main socially well-adapted individuals of considerable ability and achievement. For this select group, scholarly discourses on religion, mythology, primitive psychology, and other esoteric subjects undoubtedly provide intellectual stimulation and absorbing interests that add savor to an otherwise dull existence. However, Jung's mystical and highly intellectual approach has little to offer the average neurotic person who is painfully conscious of his inadequacies and is primarily concerned with the need for social adjustment and normalization.

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CHAPTER X

INTRODUCTION TO THE PSYCHOSES

Psychoses are major personality disorders marked by profound mental and emotional disruptions that render a previously normal individual incapable of adequate self-management or adjustment to society. Two terms that are closely identified with psychoses are *insanity* and *dementia*. "Insanity" is a legal term denoting that the individual is so confused and deranged as a result of a mental disease that he is not legally responsible for his actions. At one time, the term "dementia" was applied to most mental disorders, but it is now generally interpreted as synonymous with gross mental deterioration. Some but not all psychoses are accompanied by dementia.

Symptomatology.—There are many types of psychoses, and each psychosis has its own unique symptom pattern. However, it is possible to obtain a general impression of what constitutes a mental disorder by analyzing the symptoms noted in a large number of consecutive admissions to a mental hospital. Such an analysis (16), based on 500 unselected mental patients, is reported in Table III.

When symptoms are arranged on the basis of their social significance, it is found that 99 per cent of patients engage in behavior that is bizarre, peculiar, or annoying to others. Approximately three-fourths of hospitalized cases exhibit traits detrimental or dangerous to themselves in that they are confused, disoriented, suicidal, and otherwise grossly incapable of self-management. About 18 per cent are destructive, assaultive, antisocial, or potentially homicidal. Close to 90 per cent of psychotic individuals exhibit emotional, social, and thought disturbances; 56 per cent present speech abnormalities; 45 per cent suffer from memory defects; and 40 per cent show psychomotor disorders.

With respect to individual symptoms, delusions, generally of

TABLE III. ANALYSIS OF SYMPTOMS IN 500 CONSECUTIVE ADMISSIONS TO A MENTAL HOSPITAL ¹

Symptoms	Incidence per 100 patients
Behavior: bizarre, peculiar, annoying	99
Behavior: detrimental or dangerous to self	74
Behavior: detrimental or dangerous to others . . .	18
Emotional-social disturbances	88
Depression	33
Irritability	27
Apprehension	20
Incongruity	19
Suspiciousness	17
Suicidal trends	16
Destructive-assaultive	15
Apathy	15
Elation	14
Amoral conduct	7
Thought disturbances	88
Delusions	46
Confusion	43
Hallucinations	28
Ideas of reference	15
Obsessions	3
Speech abnormalities	56
Incoherent	30
Retarded-mute	14
Other peculiarities	17
Memory defects	45
Disorientation	38
Losses-confabulation	35
Psychomotor disturbances	40
Hyperactivity	20
Mannerisms-stereotypies	14
Hypoactivity	6

¹ From PAGE, J. D., and D. S. PAGE, Criteria for mental hospitalization, *J. abnorm. soc. Psychol.*, 1941, 36, 433-435.

a persecutory nature, lead with an incidence rate of 46 per cent. Mental confusion is a close second, with a frequency of 43 per cent. Depression, disorientation, incoherent speech, and loss of memory are each noted in about one-third of mental patients. Slightly more than one-fourth of mental patients are irritable, and a similar proportion experience hallucinations. Such traits as apprehension, emotional incongruity, suspiciousness, suicidal trends, destructiveness, apathy, elation, ideas of reference, retarded speech, hyperactivity, and psychomotor mannerisms are each present in from 13 to 20 per cent of consecutive admissions. Stuporous reactions and amoral conduct are each noted in slightly more than 5 per cent of hospitalized patients, and 3 per cent suffer from obsessions.

Incidence.—The incidence of psychoses may be calculated in three different ways: by the number of individuals who become psychotic each year, by the total number of psychotic persons in the population during a specific year, and by the total number of individuals who at some time in their life will become psychotic. The most reliable figures are based on the number of mentally ill individuals admitted to mental hospitals. These statistics are not comprehensive, however, since many psychotic individuals are cared for at home or in general hospitals and nursing homes. New York State figures indicate that 1 out of 500 individuals in the general population fifteen years of age and over is admitted each year to state and private mental hospitals. When we add to the number admitted during the year the number of patients who were already in hospitals on the first day of the year, the incidence of known mental patients during a specific year increases to 1 per cent of the general population fifteen years of age and over (17). The chances of developing a psychosis during a lifetime are strikingly high. Expectancy figures based on recent admission rates indicate that 8.5 per cent, or 1 in 12, of all persons born will at some time in their life be admitted to a mental hospital (23).

Classification.—Psychoses are usually divided into two general groups. In one category are mental disorders characterized by functional disturbances that are not associated with any demonstrable organic or toxic pathology. Unfavorable heredity, sup-

plemented by constitutional factors and adverse life experiences, is the major cause of these *functional* or *constitutional psychoses*. Included in this group are *schizophrenia*, *manic-depressive psychosis*, *paranoia*, and *involutional melancholia*.

The second general category comprises the mental diseases that are associated with, and are most likely due to, demonstrable organic or toxic pathology. These disorders, known as *toxic-organic psychoses*, include *senile dementia*, *psychosis with cerebral arteriosclerosis*, *general paresis*, *alcoholic psychoses*, and a number of other less common diseases.

Constitutional psychoses account for approximately one-third of patients admitted each year to mental hospitals, and toxic-organic psychoses are responsible for another third of all admissions. The remaining third are difficult to classify. A brief description of the main constitutional and toxic-organic psychoses follows:

Schizophrenia.—Also known as *dementia praecox*, this disease is divided into four subtypes: The *simple type* of schizophrenic patients are apathetic, indifferent, untidy, and shiftless. Hallucinations and delusions are lacking. The *hebephrenic type* present bizarre and unusual symptoms. Possibly in response to pleasing hallucinations, they smile and giggle in a silly, superficial manner and are given to facial grimaces. Weird and apparently irrelevant ideas are expressed. Speech is confused and incoherent. The *catatonic type* are frequently mute and negativistic. At times the general musculature is exceedingly rigid or flexible. Impulsive and stereotyped behavior is common. Some exhibit a peculiar form of "static" excitement. The *paranoid type* are primarily distinguished by unsystematized delusions of persecution or grandeur. Ideas expressed are poorly organized and obviously false. Supplementary symptoms are auditory hallucinations and emotional aggressiveness. As the disease progresses, there is a tendency toward apathy and deterioration.

Paranoia and Paranoid Conditions.—Patients of the former type present well-systematized constellations of persecutory ideas, logically elaborated on the false interpretation of some actual occurrence. Emotions are consistent with the ideas ex-

pressed. The patient is suspicious and may attack his alleged persecutors. Intelligence is generally high and well retained. Regardless of the duration of the psychosis, personality deterioration is negligible. *Paranoid conditions* stand between the paranoid form of schizophrenia and paranoia. The ideas of persecution are moderately well elaborated and the personality is fairly well preserved. In contrast with paranoia, hallucinations may be prevalent, and there is a greater inclination toward illogical thinking and behavior abnormalities.

Manic-depressive Psychosis.—This is an affective psychosis with emotional oscillation as the predominant feature. In the manic phase, the psychological processes are in high gear. The patient is hyperactive and overtalkative. The dominant mood is one of great elation, but this gives way easily to irritability and aggression. In depression, the process is reversed. The patient is sad, and retarded in speech, thought, and actions. Most patients are either excited or depressed but a few show a mixture of symptoms, for example, simultaneous depression and restlessness.

Involitional Melancholia.—Like manic-depressive psychosis, this is an affective disorder, but it is limited to depressions. As compared with the depressed phase of manic-depressive psychosis, involitional melancholia has its onset later in life, and the patient is considerably more agitated, apprehensive, and self-condemnatory. A prevalent symptom is the delusion of having committed some unpardonable sin, for which the individual should be severely punished.

Senile Dementia.—Personality and mental peculiarities of greater severity than those usually noted in aged individuals are classified under the general heading of senile dementia. A frequent symptom complex consists of progressive loss of memory, restlessness, disorientation, emotional instability, and general mental decline. In individual cases, the dominant feature may be depression, agitation, delirium, confusion, or paranoid tendencies.

Psychosis with Cerebral Arteriosclerosis.—This is also a psychosis of old age, but the onset occurs at an earlier age than senile

dementia. The symptoms are similar to those noted in senile psychosis and include memory losses, emotional irritability, confused states, and progressive mental enfeeblement.

Alcoholic Psychoses.—Prolonged addiction to intoxicating beverages may result in one of three main clinical reactions. Acute cases, characterized by a clouding of consciousness, bizarre visual hallucinations, and marked tremors, are diagnosed *delirium tremens*. If, following the acute stage, the patient develops striking defects in memory with a tendency to fill in the gaps by confabulation, the disease is called *Korsakoff's psychosis*. Alcoholic patients who are in contact with their surroundings but experience terrifying hallucinations of an auditory nature come under the heading of *acute hallucinosis*.

General Paresis.—Syphilitic involvement of the brain results in a variety of mental and physical symptoms. Judgment, character, and the more cultural aspects of the personality are grossly impaired. Confusion, memory losses, and intellectual retardation are prevalent. Euphoria, depression, or apathy may dominate the emotional sphere. Patients may complain of fatigue and headaches. Convulsions are not uncommon. The pupils of the eyes are sometimes unequal and fail to accommodate to light. Wassermann blood and spinal tests are positive.

Psychoses with Convulsive Disorders.—Behavior abnormalities of a psychotic nature are occasionally noted in persons subject to epileptic seizures. Two general psychological patterns are recognized. Some individuals show a gradual deterioration of emotions and mental functions with or without delusions and hallucinations. Other patients exhibit a clouded mental state, which may precede, follow, or be substituted for the convulsive attacks. Common reactions during the clouded period are confusion, violent excitement or panic, religious exaltation, and varied psychomotor disturbances.

The relative frequency of the main disorders is indicated in Table IV. In round numbers, out of every 100 patients admitted for the first time to mental hospitals in this country, about 20 are diagnosed schizophrenia, another 20 either cerebral arteriosclerosis or senile dementia, 10 alcoholic psychosis or alcoholism,

TABLE IV. DISTRIBUTION BY SEX AND DIAGNOSIS OF FIRST ADMISSIONS TO HOSPITALS FOR MENTAL DISEASE IN THE UNITED STATES DURING 1942¹

Mental disorder	Per cent		
	Male	Female	Total
Schizophrenia	19	21	20
With cerebral arteriosclerosis	12	12	12
Alcoholic psychoses and alcoholism	15	4	10
Manic-depressive	7	14	10
Senile dementia	8	11	9
General paresis	8	4	6
Involuntional melancholia	2	7	4
Paranoia and paranoid conditions	1	2	2
With convulsive disorders	2	2	2
All others	26	23	25

¹ From *Patients in mental institutions, 1942* U S Dept Commerce Washington: U S Govt Printing Office, 1945

10 manic-depressive psychosis, 6 general paresis, and 4 involuntional melancholia. Thus these seven diseases account for 70 per cent of first admissions.

GENERAL FACTORS

Age.—Far from occurring in sporadic, random fashion throughout the life span, each mental disease has its own characteristic age of onset, as determined by first admissions to mental hospitals. Some representative examples are noted in Fig. 7. Dementia praecox, or schizophrenia, is essentially a disease of adolescence and early adulthood. Manic-depressive and alcoholic psychoses and general paresis are most prevalent during middle age, and involuntional melancholia occurs mainly during late middle life. The age curves for other psychoses follow a similar bell-shaped pattern, with most cases occurring within a narrow age range.

The intimate relationship between age and the overt manifestation of specific psychoses provides an interesting foundation for a biological interpretation of mental disease. The human organism is constantly changing, and it may be that internal

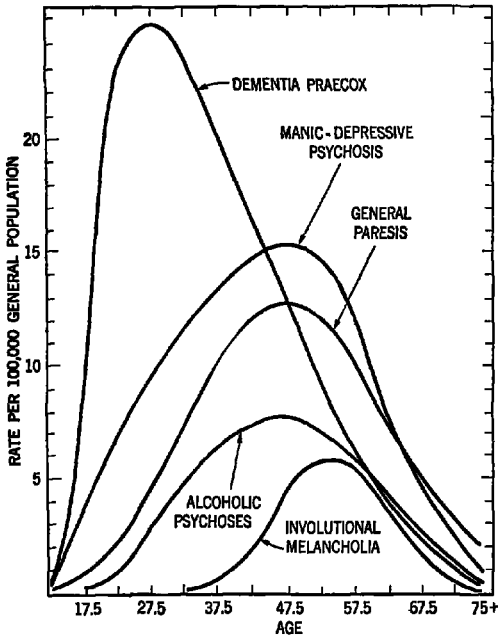


FIG. 7.—Number of first admissions to state mental hospitals in the United States by age and psychosis, expressed as rates per 100,000 of the corresponding general population. (From Landis, C., and J. D. Page, *Modern Society and Mental Disease*. New York: Farrar and Rinehart, 1938.)

changes occurring at certain ages serve as precipitating agents, releasing latent constitutional potentialities for developing specific mental disorders.

For all diseases combined, the age curve of first admissions, illustrated in Fig. 8, rises rapidly from early adolescence to adulthood, levels off during the period from twenty-five to fifty, then rises moderately from fifty to sixty and sharply after sixty. As

compared with the incidence rate for ages fifteen through nineteen, the incidence rate for ages twenty-five through twenty-nine is about twice as high, that for ages sixty through sixty-four is four times as high, and that for age seventy-five and over is ten times as high.

Sex Differences.—As is indicated in Fig. 8, the rates of first admission for men are higher than those for women at all age

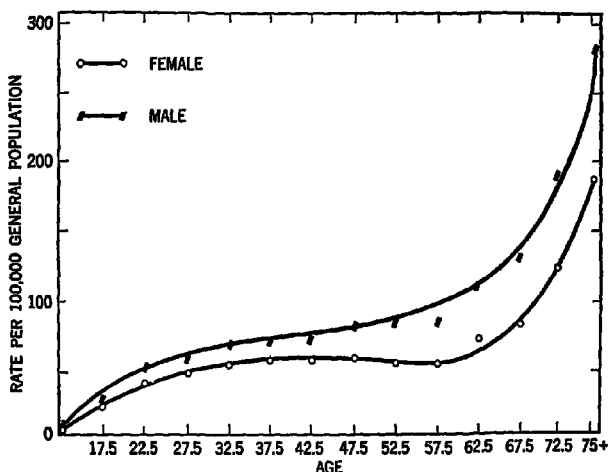


FIG. 8.—Number of first admissions to state mental hospitals in the United States by age and sex, expressed as rates per 100,000 of the corresponding general population. (From Landis, C., and J. D. Page, *Modern Society and Mental Disease*. New York: Farrar and Rinehart, 1938.)

levels. However, as women, on the average, live about five years longer than men, and thus run a longer risk of developing a mental disease, the expectancy of mental disease among females is slightly higher than among males. A summary of Tietze's findings with respect to the chances of eventual admission to a mental hospital by sex and diagnosis is reported in Table V. Out of every 100 females born, 8.6 per cent will be admitted to a mental hospital at some time during their life as compared with an expectancy of 8.5 per cent for males. With respect to individual diseases, a substantially higher percentage of men than

TABLE V. CHANCES, BY SEX AND DIAGNOSIS, OF EVENTUAL ADMISSION TO HOSPITALS FOR MENTAL DISEASE; BASED ON RATES PER 1,000 BORN, NEW YORK STATE.¹

Mental disorder	Males	Females	Both sexes
Cerebral arteriosclerosis.....	21.1	21.0	21.1
Schizophrenia.....	15.8	16.1	16.0
Senile dementia.....	10.4	17.2	13.7
Involucional melancholia.....	3.0	7.4	5.1
Manic-depressive.....	3.3	6.8	5.0
Alcoholic psychosis.....	8.0	1.9	5.0
General paresis.....	6.5	2.1	4.4
All other.....	16.9	13.5	15.2
Total.....	85.0	86.0	85.5

¹ From TIETZE, C., A note on the incidence of mental disease in the State of New York, *Amer. J. Psychiat.*, 1943, 100, 402-405.

women will develop alcoholic psychoses and general paresis, and a substantially higher percentage of women than men will develop involucional melancholia, manic-depressive psychosis, and senile dementia. The sex differences are negligible in cerebral arteriosclerosis and schizophrenia.

Intelligence.—In educational background and intelligence, mental patients do not differ from the general population. Before they become psychotic, they exhibit the usual range of mental ability. Some are bright or superior, others are dull or defective, but the great majority possess average intelligence. After the onset of disease, many patients, because of apathy or mental impairment, do poorly on tests of intelligence, so that test findings do not afford a true measure of their original intelligence. Every psychosis occurs at all intelligence levels, but the average intelligence of patients developing certain diseases is slightly higher than that for patients with other psychoses. In general, patients with paranoia, involucional melancholia, and manic-depressive psychosis are brighter and better educated than schizophrenic and alcoholic patients. The latter are, on

the average, brighter and better educated than patients having general paresis, cerebral arteriosclerosis, and senile dementia (9, 10).

Economic Status.—Ecological studies of the distribution of mental disease within a city have shown that the incidence rate is higher in poor than in wealthy communities. This is in keeping with the usual finding that physical, mental, and social disorders are more common in slum and deteriorated areas (6).

Urban-rural.—With size of population held constant, urban areas contribute about twice as many first admissions to mental hospitals as do rural areas. This, however, does not give an accurate picture of the prevalence of mental disease in rural communities. Living in a city is no more conducive to developing a mental disease than living in the country, but the chances of being sent to a hospital are far greater if one is mentally ill in a city. One reason for this is that hospitals are less accessible to farmers than city people. Farmers rarely send even their physically ill relatives to general hospitals. Secondly, it is much easier to care for a mental patient on an isolated farm than in a city apartment. In most instances, a patient who weeps all day, who sings and yells all night, or who annoys neighbors with his bizarre behavior will have to be sent to a hospital if he lives in an apartment, whereas the same type of patient can frequently be cared for on an isolated farm where there are no neighbors to complain.

Proof that there is no real difference in urban and rural disease rates is provided by several surveys conducted in this country and in Europe, which show that when an actual count is made of the mentally ill in the population, whether cared for at home or in institutions, the incidence rate for rural areas closely approximates that for urban areas (10).

Race.—No racial or national group is immune to any mental disease. The same psychoses noted in the United States are encountered among primitive people, Asiatics, Africans, and Europeans. Even the symptoms are the same. Throughout the world, mental patients are marked by delusions, hallucinations, mental confusion, and bizarre behavior. The only difference is in the surface content of symptoms. Thus a Bushman with

delusions of grandeur imagines he is a chief, an Englishman believes he is the King, and an American proclaims that he is President of the United States. In primitive societies, paranoid individuals imagine that they are being persecuted by animals and evil spirits; in religious cultures, they are persecuted by devils; and in other countries, they are persecuted by the police and political parties. Since the symptoms expressed are as much a product of the culture as the language used to describe them, changes in culture produce corresponding changes in symptoms. A few years ago, mental patients in this country received imaginary messages over the telephone; now the imaginary voices come from the radio (10).

Because of the absence of adequate comparable data, it is impossible to say whether mental diseases in general or specific psychoses are more prevalent in certain racial or national groups. In this country it has been found that when correction is made for age and urbanization, the incidence rate of hospital admissions for the foreign-born white population is almost identical with that for the native white population, the foreign-born rate being only 8 per cent higher (12). The probability that all European national groups are equally affected is suggested by military data. In each of the seven countries listed in Table VI, about 1 per cent of all men conscripted for military duty were rejected because of nervous or mental disease.

In this country, the rate of first admissions of Negroes to mental hospitals is more than twice as high as that for the white population (10). Whether this represents a true biological difference in susceptibility is an undecided question. Against this hypothesis is the fact that the greatest differences between the white and Negro rates occur in the acquired organic diseases, namely, general paresis and alcoholic psychoses, that are associated with low economic and cultural status. There is also the factor that more white than Negro patients may be cared for at home. The doctrine that Negroes are no more susceptible to mental disease than whites is supported by the finding that in this country a higher percentage of white than Negro registrants were rejected for military service by local draft boards because of mental disease (1).

TABLE VI. THE RELATIVE INCIDENCE OF MENTAL DISEASE IN VARIOUS EUROPEAN COUNTRIES AS INDICATED BY THE REJECTIONS FROM MILITARY SERVICE BECAUSE OF NERVOUS OR MENTAL DISEASE¹

Country	Year reported	Per cent of conscripts rejected
Sweden.....	1934	0.92
Germany.....	1935	0.95
Estonia.....	1924	0.98
Holland.....	1934	1.01
Finland.....	1933	1.03
Belgium.....	1934	1.03
Poland.....	1932	1.07

¹ From LANDIS, C., and J. D. PAGE, *Modern society and mental disease*. New York: Rinehart, 1938.

Relatively few American Indians are admitted to mental hospitals, but since reservation Indians are an isolated rural group who are not inclined to avail themselves of hospitals, this observation is not especially significant.

Birth Order.—Some earlier reports, which failed to correct for the fact that psychoses are more prevalent among older than younger people, indicated that older brothers and sisters in a family, and especially the first-born, are most apt to develop mental disease. In recent, better controlled studies (13), no relationship has been found between order of birth and mental disease.

SOME POPULAR MISCONCEPTIONS

Alleged Increase.—From 1910 through 1940 there was a 44 per cent increase in the incidence rate of first admissions to civil mental hospitals in New York State. This figure is not a cause for alarm, however, since it does not represent a true increase but merely an increase in the number of patients going to hospitals. In 1910, hospitals of all types and especially mental hospitals

were distrusted and avoided whenever possible by the general population. It was considered disloyal and even shameful to put a mentally sick relative in an institution. Over the years, the attitude of the general public toward mental hospitals has

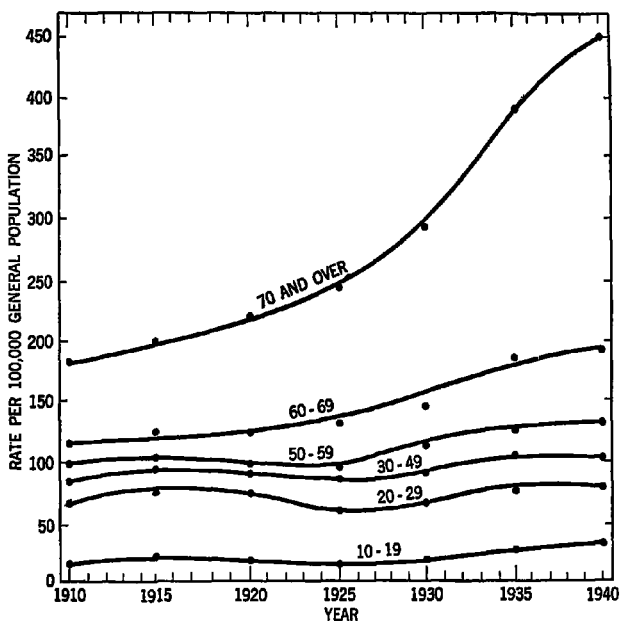


FIG. 9.—Trend analysis by age of first-admission patients to the state mental hospitals of New York, 1910-1940. (From Page, J. D., and C. Landis, *Trends in mental disease. J. abnorm. soc. Psychol.*, 1043, 33, 513-524.)

become more favorable, with the consequence that a greater number of patients who were formerly cared for at home are now sent to mental hospitals. Other factors tending to increase hospital admissions have been the improvement of hospital facilities, decrease in size of families, smaller homes, greater urbanization of the population, and increase in the number of aged individuals.

A study of the age of first admissions from 1910 through 1940 reveals that the incidence rates for ages twenty to fifty-nine has

remained fairly constant. The increase has been essentially limited to the age group of seventy and over (Fig. 9). Since the symptoms of aged patients are rarely acute or severe, it is possible, at some inconvenience, to care for these individuals at home. This was done in the past, but now they are being sent

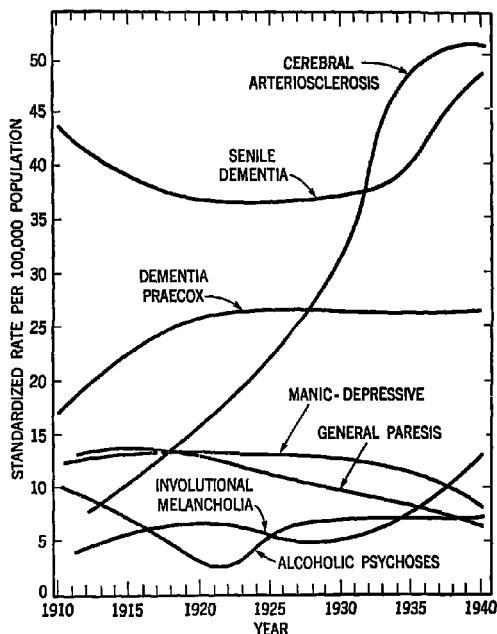


FIG. 10.—Trend analysis by psychosis of first-admission patients to the state mental hospitals of New York, 1910-1940. (From Page, J. D., and C. Landis, *Trends in mental disease. J. abnorm. soc. Psychol.*, 1943, 38, 518-524.)

in ever increasing number to mental hospitals. A study of trends with respect to individual psychoses, reported in Fig. 10, emphasizes this point. In recent years there has been a sharp increase in the rates of first admission for those diseases that occur in late middle life and old age, namely, cerebral arteriosclerosis, senile dementia, and involutional melancholia. Those psychoses that occur in the prime of life, for example dementia praecox, manic-

depressive insanity, and general paresis, either have shown no increase or an actual decrease in rate of first admissions (15).

The absence of any real increase in mental disease is confirmed by other data. During the period from 1902-1905, a total of 1.06 per cent of men conscripted in Sweden were rejected from military service because of a nervous or mental disease. During the period 1920-1925, the per cent rejected was 0.91, and for the period 1931-1934 a total of 0.96 per cent were rejected. Military and hospital figures for other European countries, Australia, and New Zealand also fail to show any increase in mental disease (10, 25).

Emotional Stress.—In attempting to arrive at some explanation why a previously normal person becomes psychotic, there is a tendency to exaggerate the importance of incidental or coincidental emotional factors. Whenever a person exhibits abnormal symptoms following the death of some dear one, an unfortunate love affair, a business failure, or the loss of a position, there is a strong temptation to interpret the psychosis as the direct result of these misfortunes. The fallacy in this reasoning is that all persons experience severe emotional shocks at some time during their lives, but only a few vulnerable or constitutionally predisposed individuals are adversely affected. If intense emotional stresses and strains were of themselves capable of inducing or even precipitating mental disorders, the incidence of first admissions to mental hospitals should be greatly increased during periods of depression or war. Actually, a study of admissions to mental hospitals shows that neither the First World War nor the economic depression of 1929 had any noticeable effect on the incidence of mental disease (10). Preliminary reports indicate that this also applies to the Second World War.

Cultural Level.—It is widely held that mental diseases are a waste product of the fast tempo of modern life and that primitive groups are free from such disorders. The literature on primitive people, however, contains frequent references to abnormal behavior among South Sea Islanders, Eskimos, and primitive African tribes. In fact, Winston's analysis (24) of the data on mental disorders reported by Mead in her study of Samoa

suggests that constitutional psychoses are as prevalent in Samoa as in rural areas of the United States.

The presence in ancient civilizations of mental disorders similar to those of modern society is well established. The descriptions of mental patients contained in the Bible and other early writings agree with the clinical symptoms of today. That mental diseases were fairly prevalent in ancient Rome is indicated by the fact that the Romans found it necessary to pass laws providing for the care of the insane.

Vicious Nature.—On stage, screen, and radio the insane are generally portrayed as homicidal maniacs endowed with extraordinary cunning and superhuman strength. Nothing is further removed from the truth. A small minority are violent and destructive, but the overwhelming majority of mental patients are docile, harmless, or even good-natured individuals possessing average or less than average physical endurance and strength. *Their conduct is more annoying than dangerous, and unless provoked they are quiet and easily managed.*

Contagion.—People often refuse to commit a mentally ill relative to a mental hospital on the grounds that the association with other patients would make their sick relative worse. This misconception of the origin of mental disease is also reflected in the reluctance of many persons to work in mental hospitals. They are afraid that after associating with mental patients for several years they will become like the patients. Obviously, these fears are without foundation. One does not catch a psychosis like a cold. Far from being contagious, a psychosis is actually very difficult if not impossible to develop unless one has the prerequisites. These vary for specific diseases but consist mainly of defective genes, toxins, and brain lesions.

Sex and Marriage.—Abnormal sexual reactions are sometimes noted in mental patients, but they are merely symptomatic of the basic pathology of the total personality and are without causal significance. In their early sexual development, individuals who later become psychotic have the same variety of experiences as normal people, but because of their constitutional make-up they are more disturbed by such experiences (11). In other words, sexual deviations do not produce psychoses, but individ-

uals prone to mental disease may exhibit sexual peculiarities. For example, masturbation, even if long continued, is never the cause of any psychosis, but an inadequate individual who is unable to make normal sexual adjustments may resort to this expedient.

An analysis of the marital status of hospitalized mental patients shows that the incidence of mental disease is lowest for the married population. The incidence rate for the widowed population is almost twice as high, that for the single population is from two to three times as high, and that for the divorced is from four to five times as high as that for the married population. These data likely provide the basis for the prevalent but erroneous belief that marriage or a regular sex life will prevent or cure mental disease. The true interpretation is that marriage is a test of emotional maturity and stability. Through choice or necessity, unstable and maladjusted individuals who are predisposed to mental illness frequently remain single. If they do marry, they are soon divorced, and they do not remarry after they have been widowed or divorced. As a consequence of this selection, the incidence of abnormal people among the single, widowed, and divorced population is higher than among the married. Supplementing this biological selection is the factor of home care. When an unmarried person becomes psychotic, he is more apt to be sent to a mental hospital than an equally psychotic married person who has a family able to care for him at home (10).

Eugenics.—There is no factual basis for the frequently expressed fear that the mentally ill, through their alleged numerous offspring, constitute a eugenic threat to society. This view is based on many erroneous assumptions. To begin with, it assumes that all mental diseases are inherited, whereas actually only about one-third of patients hospitalized each year have psychoses that may be attributed to defective genes. Secondly, it assumes that mental patients have numerous children. Actually, many mental patients never marry, and those who do marry have fewer children than healthy individuals. Thirdly, it assumes that most of the children of mental patients become psychotic. The fact is that even in those instances where a par-

ent suffers from a hereditary disease, only a small percentage of the children are affected, since with one or two exceptions hereditary mental diseases are recessive in nature (10).

Genius and Mental Disease.—Although mediocre and pseudo artists are frequently temperamental or peculiar, true men of genius are less susceptible to mental disease than the general population. As compared with an expected incidence of mental disease of 8.5 per cent for the general population, only 4 per cent of the 1,030 British men of eminence studied by Havelock Ellis (5) and 4 per cent of the 300 geniuses studied by Cox (26) were insane. In general, the men of genius who were psychotic for a considerable portion of their lives were less outstanding than those who exhibited symptoms only during senility or than those who remained sane. The great majority of insane geniuses were poets and writers; relatively few were scientists. In addition to refuting the once popular theory that genius and insanity go hand in hand, these studies show that insanity destroys genius. With the exception of one or two poets who wrote their masterpieces during periods of mental illness, most great men ceased to be productive during or after their psychoses.

Incurability.—The erroneous idea that mental diseases are incurable is based on selected cases. Actually, from 50 to 60 per cent of first admissions to mental hospitals are discharged as cured or improved within two years of admission. Although a few patients recover even after 10 or more years of illness, there exists an inverse relationship between favorable outcome and length of hospital stay. Most patients who recover remain in a hospital less than a year, and the likelihood of discharge with a favorable outcome decreases rapidly as the duration of hospital life increases (10).

TREATMENT

Hospitalization.—It is possible to care for certain types of mental patients at home, but hospitalization is the best policy in most cases. This statement applies not only to patients who are suicidal or a menace to society but also to harmless patients whose peculiar behavior and incapacity for adequate self-management imposes a heavy strain on the family. In addition to

providing more effective treatment and supervision, hospitalization offers a more favorable environment that may be modified to fit the individual patient. During the early acute stages of the disease, emphasis can be placed on limitation of freedom and physical care. As the patient improves, freedom may be increased and a program of socialization and reeducation undertaken. Relatives who are prejudiced against sending their mentally ill to hospitals should bear in mind that most patients prefer the impersonal and somewhat regimented routine of a hospital to the personal, emotionally charged atmosphere of the home, where supervision is either too lax or too rigid. ✓

A practical aspect of hospitalization is that it is inexpensive. Most mental hospitals in this country are publicly supported institutions where patients pay according to their means, if at all. Of the more than 500,000 patients in mental hospitals at the present time, only 2 per cent are in private institutions. Although they do not provide the luxuries, individual care, and privacy of the best private hospitals, most state hospitals provide adequate care and treatment. Unless the family is very wealthy, it is advisable to send a patient immediately to a public hospital. Mental diseases generally require months or years of hospital treatment, and it is unfair to other members of the family for them to make great financial sacrifices for the doubtful advantage of placing a relative in a private hospital. It is also unfair to the patient, since upon recovery he must return to a serious financial situation at home. The money can be more advantageously used for the important period of convalescence.

The procedure for admitting patients to mental hospitals varies from state to state. A few states provide for voluntary admission, whereby a patient may merely walk into a hospital, admit himself, and leave whenever he wishes upon giving a few days' notice. Relatively few patients, however, are admitted this way. Most mental patients are admitted by court order.

In the more progressive states the court order is merely a legal formality. The patient is examined by two qualified physicians who certify that the patient is mentally ill. A copy of their findings is sent to the judge, who, without examining the patient, signs a court order providing for the compulsory hospi-

talization of the patient for as long a period as the hospital authorities think is warranted. In other states the medical testimony may be supplemented by court proceedings, including, in some instances, a trial by jury to determine a man's sanity. To protect the patient against being "railroaded" into a hospital, most states provide that a certified patient or some interested party can bring legal action to have the case reviewed or submitted to a jury. In some states a committed patient loses all legal rights until he is again declared sane by a court; in other states he retains some legal rights (22).

Family Care.—Several European countries, notably Belgium, have made extensive use of the practice of boarding out mental patients in supervised private homes (18). The main advantages of family care are that it is inexpensive and provides a more natural environment. The greatest disadvantage is that it is not suited to all types of patients. In recent years, mental hospitals in this country have experimented with the idea of placing selected patients in private homes under hospital supervision, but the plan has not made great headway.

Medical Care.—Like normal individuals, mental patients suffer from all forms of physical diseases. Although these are incidental and have negligible psychiatric significance, it is standard procedure for physicians to give each patient a complete physical examination and to administer appropriate treatment. In selected cases, medication and special diets may be prescribed to improve appetite, correct gastrointestinal disorders, combat insomnia, and alleviate other physical complaints associated with the mental disturbance.

Psychotherapy.—Many patients are so completely insulated against the outside world by their psychosis that psychotherapy is of no value. There are, however, a large number of psychotic individuals who can be helped by talking things over with a trained psychiatrist. The *psychobiological* approach of Adolf Meyer has been found to be very useful in these cases. As in other forms of psychotherapy, the first step is to obtain a complete case history. After talking with the patient and his relatives, the psychiatrist attempts to formulate the basic problems, considering the total personality in its cultural setting. The

goal of treatment is to bring about a wholesome integration of the personality that will offer the patient temporary if not permanent security, based on self-understanding and self-dependence.

The treatment procedure is one of *distributive analysis* and *synthesis*. On successive consultations the psychiatrist analyzes some symptom or factor with the patient, correlating the past with the present and the future. After each treatment the patient and the psychiatrist, working together, attempt to formulate what has been obtained from the analysis and how this information may be constructively used toward a final synthesis. Long-established habits and reactions of many patients may have to be corrected by reeducation. When advisable, suggestion, hypnosis, catharsis, and other techniques are utilized. Throughout the treatment the psychiatrist plays an active guiding role, but he does not force his interpretations on the patient or attempt to impose upon him a specific philosophy of life. Rather, he offers suggestions and possibilities that will aid the patient to work out a solution to his own problems (3).

Shock Therapy.—In recent years extensive use has been made of various forms of shock therapy (21) in the treatment of the functional or constitutional psychoses. The first method, insulin therapy, was introduced by Sakel, a Viennese physician (19). Treatment consists of the intramuscular injection of insulin in sufficient quantity to produce a deep coma lasting several hours. The insulin produces a coma by creating a sugar deficiency in the blood. Following insulin injection, the patient becomes progressively more somnolent, loses consciousness, and gradually passes into shock. Shock is marked by muscular twitchings, episodes of excitement, grimaces, and diffuse neurological disturbances. The patient may be dry or perspire profusely. In some instances epileptiform convulsions occur. The coma is terminated by restoring blood sugar through the administration of glucose by mouth, stomach tube, or intravenous injection. Treatments are repeated three to five times each week for a period of about 10 weeks.

Insulin, first used in the treatment of schizophrenia, was subsequently applied to the affective psychoses. The exaggerated

claims of the early sponsors have not been realized (20). The present viewpoint is that insulin therapy is ineffective in the treatment of the affective psychoses but is useful in the treatment of certain types of schizophrenic patients. The percentage of cures in insulin-treated schizophrenic patients is somewhat higher than in nontreated cases, and the period of illness is shortened. The main disadvantage of insulin therapy, apart from its limited effectiveness, is that it is a complicated form of treatment, requiring good hospital facilities and a large trained staff.

Shortly after the introduction of insulin therapy, Meduna (14) originated a simpler form of shock treatment. He produced convulsions in mental patients by the injection of a convulsant drug, usually metrazol. The procedure is very simple. While the patient is lying down, the physician injects a small amount of metrazol into the arm. A few seconds after the injection the patient loses consciousness and has an epileptoid convulsion lasting about a minute. Convulsions are repeated once a day or less frequently for several weeks.

Although originally offered as a treatment for schizophrenia, metrazol has been found to be of little value in that disease. On the other hand, it is of considerable worth in the treatment of the affective disorders, especially the depressive psychoses of the highly agitated variety (2). There are, however, many objections against the use of metrazol. The main one is that patients object strenuously to the treatment, because the drug produces a profound state of fear during the brief interval between the injection and the loss of consciousness. A second objection is that unless preventive measures are taken, the convulsions result in mild fractures of the spinal vertebrae and dislocations of the arms and jaw.

The use of metrazol in convulsion therapy has been gradually supplanted by electroshock (21). First used by the Italian workers Cerletti and Bini, the method consists in placing electrodes on the head and passing a measured electric current through the brain. As soon as the current is applied, the patient loses consciousness and almost immediately has an epileptiform

seizure that lasts about a minute. Upon awakening after the convulsion, the patient has no recollection of the treatment.

Electroshock convulsions are more easily controlled than metrazol convulsions and are less severe. In addition, they are not accompanied by any sensations of fear or apprehension, and the possibility of fractures is diminished. Like metrazol, electroshock has been found to be ineffective in the treatment of schizophrenia. It is used primarily in the affective psychoses, especially the agitated depressions. For these conditions the therapeutic results compare favorably with those obtained with metrazol.

Theories attempting to explain the therapeutic effects of shock fall into two groups. Psychological theories emphasize the curative aspects of fear of the treatment, the forced return to reality, the reorganization of consciousness resulting from the intense stimulation, and the individual attention received by the patient from the medical and nursing staff. Physiological theories stress the shattering of abnormal nerve pathways, detoxication, nerve-cell irritation, and the blunting of the affect. These theories are mere speculations, and the treatment remains empirical. With respect to the effect on the patient of these drastic forms of treatment, it has been found that all three techniques produce a destruction of cortical cells, some impairment of recent memory, and an occasional fatality. The fatality rate, which is very low, tends to be highest for insulin and lowest for electroshock therapy (2, 4).

Sleep Therapy.—*Narcosis*, or *sleep therapy*, consists in the production of prolonged sleep by means of a sedative drug, usually sodium amytal. Apart from having the patient awoken periodically for bathing and feeding, he is kept continuously asleep for seven or more days. Since he is in a constant drugged state, good nursing care is required. Sleep therapy has been used with favorable results in shortening the duration of manic-depressive attacks and in controlling chronic psychotic excitements. It is ineffective in the treatment of schizophrenia and other psychoses (8).

Psychosurgery.—The treatment of functional psychoses by brain surgery, originally developed in 1935 by Moniz in Lisbon,

has been pioneered in this country by Freeman and Watts (7). In this technique a small hole is drilled in the temple on each side of the patient's head. A small knife is then inserted in each hole, and an incision is made in such a way as to sever the fibroid tracts connecting the prefrontal lobes with the thalamus. This drastic operation is used only in chronic cases where other forms of therapy have failed. It has proven particularly useful in cases of agitated depression or involuntional melancholia. Psychosurgery is based on the theory that the operation liberates the patient from worry, anxiety, and inhibitions. Following the operation, patients who formerly were painfully self-conscious, depressed, and agitated become cheerful, outspoken, and carefree. A few become tactless and indifferent to social amenities, some become indolent; but many make excellent recoveries and attain their prepsychotic level of occupational and social adjustment.

Hydrotherapy.—This refers to treatment by water. One of the more common techniques is the use of *warm baths* to quiet and relax noisy, tense, overactive patients. A specially constructed tub is used, through which warm water at a controlled temperature flows continuously. Most excited patients drop off to sleep after they have been in the tub for a few hours. Disturbed patients may also be quieted by wrapping them for two-hour periods in sheets rinsed in cold tap water. This is known as the *cold wet-pack* treatment. To be effective and safe, both techniques require careful nursing supervision. In general, hydrotherapy is preferred to the repeated use of drugs as a means of quieting excited patients, because of the toxic effects of the latter.

Physiotherapy.—Various physical agents such as heat and massage are frequently used in mental hospitals for their relaxing and tonic effect.

Occupational Therapy.—Several months' idleness in hospital wards is not conducive to the mental health of physically healthy individuals. In modern hospitals supervised work is encouraged to distract the depressed, to stimulate the apathetic, and to provide an outlet for the overactive. Planned occupations aid patients to renew contact with reality, and the finished products

help restore self-confidence. The occupations prescribed are usually manual. They include weaving, furniture making, metalwork, needlework, painting, and other arts and crafts.

Recreation and Socialization.—Since recreation is an important factor in a well-balanced life, most modern hospitals make extensive use of this therapeutic aid by providing library facilities, movies, and radios, and arranging card parties, dances, athletic events, and picnics. In addition to their entertainment value, these activities promote a normal social life, so that, when discharged, the patient will not enter a strange world with which he has lost all contact.

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CHAPTER XI

SCHIZOPHRENIA

Schizophrenia is a general term referring to a group of severe mental disorders marked by a splitting, or disintegration, of the personality. The most striking clinical features include general psychological disharmony, emotional impoverishment, dilapidation of thought processes, absence of social rapport, delusions, hallucinations, and peculiarities of conduct. In former years, when it was erroneously assumed that these disorders dated from the period of puberty and invariably terminated in chronic deterioration, they were classified under the heading of *dementia praecox*. This restricted and somewhat misleading category is gradually being supplanted by Bleuler's broader concept of schizophrenia, which includes chronic and recoverable cases occurring before and after, as well as during, puberty.

Incidence.—From the point of view of frequency, schizophrenia is the most important of all mental diseases. From 1 to 2 per cent of the general population of either sex develop this disorder. It accounts for 20 per cent of first admissions and over 25 per cent of readmissions to mental hospitals in this country. As compared with other mental patients, schizophrenics have relatively lower recovery and death rates, with the consequence that they gradually accumulate in mental hospitals. In long-established mental institutions they constitute over 50 per cent of the resident population. At the present time there are some 250,000 schizophrenic patients in mental institutions, and it may be conservatively estimated that an equal number are at large in the community.

Schizophrenia may occur at all ages from childhood to senility, but it is essentially a disease of early adulthood. At the time of first admission to a mental hospital, the average age of schizophrenic patients is between thirty and thirty-five. About 10 per cent are under twenty years of age, 65 per cent are between

twenty and forty, and 25 per cent are over forty. There is a tendency for the disease to occur at an earlier age in men than in women (19).

GENERAL SYMPTOMATOLOGY

Emotional Disorders.—Absence of normal affectivity is one of the most outstanding characteristics of schizophrenics. Apathy is the nucleus of their emotional pathology. Their emotional reactions are flat and anemic—so unnatural, in fact, that it is extremely difficult for normal people to establish friendly rapport with them. Events that deeply move healthy individuals fail to dent their protective wall of indifference. They are completely untouched by the tears of relatives, death of parents, and the success of their children. Love, sympathy, and feelings of tenderness are blunted.

The chief activity of schizophrenic patients consists in staring vacantly into space. Under pressure they will work, but their production is poor and erratic. As the disease progresses, they even become indifferent to their own delusions and hallucinations. When asked if they still hear voices, they either make no response or report that they no longer pay any attention to what the voices say. The decline in interest also embraces the simple physiological drives. Unless carefully supervised, many schizophrenics would starve or die of thirst and exposure.

Schizophrenics are markedly deficient in social feeling. They are solitary individuals who rarely associate or converse with others. A group of patients may share the same ward for years and never exchange a word with one another or learn the identity of their wardmates. Each is exclusively preoccupied with his own private world. The amenities of social intercourse cease to be observed, and if the disease is long continued, the most cultured gradually become slovenly and profane.

The unpredictable, incongruous, and ambivalent quality of the emotional reactions of schizophrenics puzzles normal people and prevents sympathetic understanding. Without apparent cause, patients may suddenly giggle, scream, become enraged, assault an innocent bystander, or dive through a window. Their

laughter is mirthless and their excitement is artificial. They not infrequently react to good news with indifference and appear pleased with some misfortune. If they should commit some brutal crime, they experience no pity or remorse. At times they exhibit a mixture of contrasting emotional states. Bleuler (3) has reported an interesting description of a woman who simultaneously wept in desperation with her eyes and laughed heartily with her mouth. The explanation for this *ambivalence* was that she had recently murdered her child, whom she loved dearly for being her own and hated for being the child of her unloved husband.

Delusions.—The delusions of the schizophrenic have been aptly compared with the dreams of normal people. While we are asleep, the most fantastic and improbable dream experiences are uncritically accepted as real. In our dreams we do not question or regard as odd the fact that we are pursued by relentless enemies, are physically dead but spiritually alive, are able to converse with animals or the deceased, are enormously wealthy, are able to destroy an army by a wave of the hand, or are transformed into a deity or some famous personage. So it is with the delusions of the schizophrenic. All ideas and beliefs, however false, illogical, fantastic, and out of keeping with the patient's cultural background, are taken for granted. Schizophrenic patients make no attempt to substantiate, defend, or criticize their delusions, and it is futile for others to try to remove these delusions by appeal to reason or logic. Like the dreaming state of a normal person, the schizophrenic mind is unhampered by rules of logic and probability; all things are possible. Some patients suffer from *ideas of influence* or *passivity*. They firmly believe that someone reads their thoughts and controls the movements of their limbs by means of hypnotic or telepathic waves. This influence is exercised without the patient's consent and usually against his wishes.

The following excerpts from case histories of schizophrenic patients give some indication of the nature and scope of their false beliefs.

An unattractive young man was arrested and sent to a mental hospital for writing threatening letters to Mrs. G, the socially prominent

mother of a much-photographed debutante daughter. When interviewed, the patient claimed that Mrs. G's daughter was in love with him but Mrs. G opposed their marriage and kept her from seeing him. As proof of the daughter's love for him, the patient exhibited a rotogravure picture of the girl smiling—presumably only at him.

An unmarried female patient tied a string around a small bundle of rags and called the product her baby. She claimed that the ward physician was the father, and whenever he entered the ward she would rush up to him and present him with the baby. No one was permitted to touch the baby, and each night the mother took the baby to bed with her.

At the time the Lindbergh kidnaping case was in the headlines, a 200-pound woman was admitted to a mental hospital. She calmly stated that she was the Lindbergh baby.

Hallucinations.—Hallucinatory phenomena consisting of the perception of nonexistent external stimuli are more common in schizophrenia than in any other mental disease. Auditory hallucinations in the form of voices vilifying, threatening, or flattering the patient predominate. The voices may be identified as those of relatives, friends, or God. They may be clear or they may be so indistinct as to be unrecognizable. The messages are more often unpleasant than pleasant, and it is not unusual to observe patients on disturbed wards angrily contradicting or fighting against the voices. Some patients automatically obey the voices and on command may take off their clothes, attack other patients, or injure themselves. The more fortunate who receive agreeable messages encourage reception by withdrawing to quiet corners, where they may be observed listening with amused or beatific expressions.

Visual hallucinations are prevalent but not persistent. They occur sporadically for short periods. Celestial visions are frequently reported. God sometimes appears in person. On other occasions his presence or message is expressed by a flash of light or some unusual configuration of the heavenly bodies. Departed relatives are occasionally seen. Kinesthetic hallucinations are

especially noted in suspicious patients, who generally claim that their enemies shoot them with electricity or inject them with mysterious drugs while they are asleep. Olfactory and gustatory hallucinations center about offensive or poisonous odors and taste sensations.

Speech Disorders.—Many schizophrenics are mute or barely communicative. In some instances the paucity of speech results from their self-absorption and lack of interest in social intercourse. They do not talk because they have nothing to say to the outside world. Others refrain from speaking because the voices order them to be silent or because they imagine that they are dead. A few dare not open their mouth for fear of the consequences of their potent words or the poisonous quality of their breath. On the other hand, many schizophrenics are overtalkative, but much of their speech is incoherent, repetitive, disconnected, and irrelevant. Some egocentric meaning may lurk behind the bewildering welter of words, but to the listener it sounds like nonsense.

The following is the spontaneous production of a young hebephrenic female patient. Note the disconnected mental trend, the word-salad type of speech, and the bizarre ideas expressed.

Elation, elevation, multiplication . . . it's too high up here, in fact it's too hot, in fact it's too cold. I must say, I might say. . . . Wait a minute, can I use that? I'll ruin it, daddy. You don't know how to use it. If you can use that, I ought to be able to, you're my father. Maybe I will sacrifice. . . . The old test will start over again. In fact, it's glorifying. I can wear my hair any way. . . . Strike one, strike two. . . . Wait a minute, will you, please? I don't like this, it kind of chokes me; will you please undo it, daddy? I like nature. Are you still a cracker? I like lively humor; I'm afraid I'm losing. I like to watch baseball games. If you get cold nothing can affect it, it won't rust. . . . Hair, it might be robin redbreast. Who is grandpa. . . . Oh, I recovered, let me try and use those, you can do it. How did you do that? Oh, I just performed an operation. Electricity wasn't invented. . . . I like my conscience, though. They have tried it in every generation. . . . I love you . . . ivory complexions. Gold and pure and purple and white, darling. . . . Whisky, darling—

That wasn't whisky that calmed me, but the milk; that was the only thing that saved me. I like whiteness, I never cover my face with powder, I don't need any powder. You don't wear rust in the winter, you wear blue. I brought 10 eggs. . . . I'm afraid, I am, they did everything they could. Summer is passing, so far we have gone, summer and after all . . . if you want to. If God said I want to make the world perfect then they will have to do it themselves. There isn't any hole in my head. . . . Joan of Arc, was she your daughter too? Was she your daughter? No, it's a heart, it is. I wouldn't take that silver streak out of her hair for anything . . . maybe every time she thought aloud. In 15 minutes they performed perfect oratory but I skipped the jobs. I let the other kids hold the ropes. I was running against a country tree. . . . I was thinking. I like gingerbread but I like milk too. You hurt that nerve, didn't you? You're a dentist, give me some candy, that ought to boil you too. You don't want me to show, you want my chin to quiver. They hold my feet. . . . Oxygen, will you please give me that? I'm going to stop your heart with it. I happen to know that much. Chop the arteries off and your heart stops. A snake can't swallow but it can climb up the family tree if they have the trees they want, but I'm afraid, daddy. I'd take a vase, daddy, please take me out of this.

Occasionally a schizophrenic utterance appears to be pregnant with profound but elusive wisdom. On closer examination, however, the high-sounding phrases turn out to be empty platitudes or chance word associations. Some illustrations are "a bonfire of delight" and "the attainment of ethereal bliss through polytechnical science and soul exploration."

Neologisms, or the coining of new words, are a common schizophrenic characteristic (4). Like the neologisms of normal people, the new words are often constructed by condensing two or more words into one; but many schizophrenic neologisms are of unknown origin and their meanings, if any, are apparent only to the patient. In some cases it is doubtful whether the neologisms of the schizophrenic are meaningful words or nonsense syllables blended together. A number of neologisms coined by normal and by schizophrenic persons are listed below. It will be noted that the main difference between the two lists is that the new words created by normal individuals are logically derived and their meaning is obvious, whereas the roots of the neologisms of

schizophrenics are obscure and their meaning is usually undecipherable.

<i>Neologism</i>	<i>Meaning or Definition</i>
Normal:	
reminiscences	long-winded reminiscences
sinema	naughty cinema
reno-vation	divorce
brunch	combined breakfast and lunch
Schizophrenic:	
jackpen	jackknife <i>plus</i> penknife
bedrudgers	persecutors
poive	pleasant sayings
iava	supper
gruesor	gruesome <i>plus</i> sorrowful

Writing Peculiarities.—Some schizophrenics never touch a pencil; others are prolific writers. The same general types of abnormalities observed in their speech also occur in their writing. The style is usually repetitive, stilted, and uneven. The trend of thought is disconnected and incomprehensible. Symbols, lines, drawings, numbers, and words are combined in hodgepodge fashion. Rules of punctuation and grammar are usually ignored. Parts of words are often omitted and strange letters are added. In a letter to her husband, a schizophrenic wrote, "i's the 'tame—always—'tumin, any mo, ta ever 'te me. tum time." The husband translated this to mean, "You don't come in any more to see me. Come see me."

Thinking Disorders.—The above language peculiarities point to severe thinking impairment. The train of thought of the schizophrenic lacks unity, organization, and specificity of object. Secondary ideas, which are usually suppressed in normal thinking, flow uninhibited into the main stream of thought. The patient rambles from one incompleted idea to the next, jumping from one key word to another, with the consequence that the final product appears incoherent, disjointed, and inconsequential. Several theories have been advanced to explain this defect. Bleuler (3) attributes it to the weakening of associative links. Storch (30) and White (31) see in the language and thought processes of schizophrenics a regression to archaic and primitive forms of thought.

One argument in favor of the latter hypothesis is the fact that many schizophrenics tend to think in terms of concrete images rather than abstract ideas. In giving the meaning of words, for example, a concrete illustration is often given instead of a general definition. Thus one patient defined "peculiarity" as "having big ears," "priceless" as "gold," and "scorch" as "fire." Other manifestations of archaic thought in schizophrenia include ideas of wish fulfillment through magic and delusions of cosmic identification, metamorphoses, and rebirth. Some experimental studies indicate that schizophrenic patients do very poorly on test situations involving abstract behavior, concept formation, and generalizing ability. However, there are great individual differences among schizophrenics in these performances and some investigators claim that when adequate rapport and cooperation have been obtained, even disorganized schizophrenics can be led to generalize, to group related objects, and to solve abstract problems (15).

Impairment of Intelligence.—As is indicated by their early school records, schizophrenics, as a group, are endowed with average intelligence. The disease process, however, interferes with maximum mental efficiency, so that, on tests of intelligence administered after the onset of the disease, their performance level in terms of mental age is from one to two years below the average for the general population (18). The decline of various mental functions is not uniform. Tests of vocabulary show less impairment than tests of learning, memory, motor ability, and abstract thinking (15). The intellectual loss is not permanent. With improvement in mental health there is a corresponding recovery in the intellectual sphere.

Other Mental Symptoms.—Deteriorated and emotionally disturbed cases frequently give the impression of being completely disoriented; but when allowances are made for their inaccessibility and delusions, it is found that the average schizophrenic is fairly well oriented. He is aware of his identity, knows where he is, recognizes people, and can give the approximate date. Memory is usually well retained for early experiences but is spotty for events occurring subsequent to the onset of the disease. This is largely due to poor attention, lack of interest,

and faulty learning. Judgment is grossly defective and insight is lacking. The patient has little or no understanding of his mental condition and is incapable of critically evaluating and controlling his actions and thoughts in accordance with accepted social standards.

Physical Symptoms.—Especially in the early stages, the physical health of schizophrenic patients is poor. Because of lack of exercise, inadequate nutrition, and sleep disturbances, they are frequently weak and emaciated. Body temperature regulation is often defective.

CLINICAL TYPES

Four main types of schizophrenia are generally recognized: simple, hebephrenic, catatonic, and paranoid. The relative frequency of the four subtypes is not definitely ascertainable, since patients of the simple type are rarely committed to mental hospitals. Of all schizophrenics admitted for the first time to New York State civil mental hospitals during the period 1935-1940, 5 per cent were diagnosed as simple, 17 per cent hebephrenic, 23 per cent catatonic, and 55 per cent paranoid. The catatonic form occurs more often in women than in men; the other three forms are slightly more prevalent among men (1).

Whether there is sufficient similarity and overlap among the four types to warrant their inclusion under a general heading is debatable. Supporting the doctrine of a single disease entity is the fact that it is not uncommon for a patient to exhibit typical hebephrenic reactions at one time and later to demonstrate catatonic symptoms, or vice versa. Many patients who originally present paranoid symptoms gradually deteriorate to the hebephrenic level. When two or more members of the same family become schizophrenic, they frequently develop different clinical forms.

On the other hand, there is considerable evidence to indicate that the various subtypes have independent origins and prognosis. Age at the onset is one distinguishing feature. At their initial admission to mental hospitals, the average age of simple, catatonic, and hebephrenic patients is between twenty-five and thirty, whereas the average age of paranoid patients is between

thirty-five and forty. Paranoid patients are usually more sturdily built than those affected with other forms of schizophrenia. On the basis of post-mortem examination, Lewis (20) found that the great majority of hebephrenic and catatonic patients exhibited small aplastic hearts with general arrest in circulatory development. In contrast, the hearts of paranoid patients were above average in weight and their circulatory systems were overdeveloped. Kallmann (16) has noted that hereditary elements are more pronounced in the catatonic and hebephrenic groups than in the simple and paranoid groups. With respect to prognosis, catatonics tend to respond more favorably to treatment than do hebephrenic patients, and deterioration is less marked in the paranoid than in the hebephrenic form.

Simple Type.—The key symptom is apathy. Unless pushed by relatives or motivated by some simple physiological drive, these patients are content to remain in bed totally inactive day after day. Their fundamental wish is to be left alone. Personal hygiene is completely neglected. They rarely bathe and are untidy in appearance and dress. Motor responses are sluggish. They seldom converse except in barely audible monosyllables. Whenever possible, they substitute a nod of the head for a verbal response. Interest in personal reputation, family welfare, and external events is nil. Apart from their listless and often amoral mode of living, they exhibit few abnormal symptoms. Hallucinations, delusions, and peculiar actions are lacking.

Individuals who develop this form of schizophrenia often have a history of having been exemplary children who made good progress in school and were well behaved at home. Their model behavior during childhood is symptomatic of later development. They are model children because they do not have the interest, energy, and self-assertion required to be bad. As they grow older, they become progressively more and more apathetic. At about puberty they begin to fail in their studies and gradually stop going to school. Lacking ambition and incentive, they make no attempt to secure employment, visit friends, or amuse themselves. If urged too strongly to seek employment and lead a more useful life, they often become moody, irritable, and as-

saultive. Under such circumstances hospitalization may be required. Usually, however, they are adequately cared for at home, or they manage to get along on the outside as tramps, vagrants, and prostitutes. A fair proportion spend most of their days in prisons. Because of their superficial resemblance to the mentally defective, a few are committed to institutions for the feeble-minded.

The following dialogue is an interview with a twenty-two-year-old female patient who was sent to a mental hospital because she neglected her illegitimate child, spent most of her time in idle daydreaming, and occasionally wandered aimlessly about the town making dates with strangers.

How do you feel?

"I'm all right."

Do you like it here?

"It's all right."

Do you want to go home?

"Yes."

Do you object to being kept here?

"No, not especially. I'd rather be home."

Do you miss your baby?

"Yes."

How much do you miss her?

"Oh, I miss her."

Did you take good care of her when you were at home?

"Yes."

What do you do all day now?

"Nothing much."

What sort of a place is this?

"A hospital."

Do you hear strange voices?

"No."

Do you think people are against you?

"No."

Do you think there is anything wrong with your mind?

"I'm all right."

If you had three wishes, what would you wish for?

"I don't know."

Hebephrenic Type.—Emotional shallowness, tendency to childish silliness, bizarre delusions, hallucinations, jumbled speech, and gross disintegration of the personality are the prominent symptoms. In response to thoughts and ideas originating within their disordered minds, hebephrenics periodically have giggling spells that may alternate with outbursts of anger or affectless crying. Oblivious to their surroundings, they contentedly spend hours talking and smiling to themselves or conversing with imaginary persons. Many see heavenly visions and hallucinate peculiar odors. In the early stages, hebephrenics may be communicative but it is impossible to conduct a normal conversation with them. If they respond at all to direct questions, their comments are usually inappropriate and nonsensical. Thinking as indicated by speech and writing is confused and disconnected. Words are indiscriminately mixed together. Several independent ideas may be telescoped into one sentence.

Hebephrenic delusions are fantastic. One patient stated that a vampire had sucked out all her blood and she was now a skeleton. A second held his breath for long periods because each time he exhaled he filled the world with poisonous gas. Still another reported that there was a bee in his stomach that buzzed and talked to him. As an experiment, the attending psychiatrist gave this patient an emetic, and while the patient was distracted a bee was dropped in the pan. The patient was then assured that the bee would no longer disturb him. The next morning, however, the patient complained that the buzzing was worse than ever. The swallowed bee had been a queen bee, and now his stomach was filled with hundreds of little bees that were busily buzzing within him.

Some hebephrenics develop expansive ideas centering about the thought that they are creators and rulers of the universe. As the disease progresses, they exhibit such pronounced deterioration of intellect, judgment, speech, and social habits as to

justify the statement that they no longer resemble human beings. They become uncommunicative, indolent, sluggish, untidy, and dull. Their deterioration, however, is often more apparent than real.

Below is an interview with a hebephrenic female patient who exhibited bizarre delusions, hallucinations, and a tendency to silliness.

What is the name of this place?

(No response)

Do you know the name?

"Nay, ha, ha."

What kind of sickness is cared for here?

"Love."

Are you sick?

"Nay."

Why do you rub your head so much?

"God knows. Ha, ha."

Do you know?

"Yes."

Well, why?

"Oh, there are small snakes in my hair. Out temptation! If the world was in a state of innocence, it would not be necessary for people to wear clothing."

Why do you refuse to eat?

"Oh, God knows. Filth. Not clean."

Why are you so particular about your food?

"Love is the fulfillment of the law."

What are you thinking about at this moment?

"Ha, ha! It's rather difficult to understand what everything is about. Are there any college challenges in this place?"

Does God talk to you?

"Oh, yes."

What does he say?

"Jean, you are a good girl, good girl, good girl."

Why are you smiling now?

"I don't know."

Are you married?

"Yes."

Where is your husband?

"In New York."

Do you frequently see your husband?

"He is always with me. We're connected by love waves. There are many bad women in the world. They should be punished. Love and law are the expressions of the universe."

Do you have any children?

"Oh, ha, ha, several dozens. I had a little red baby this morning."

Where is the baby now?

"My father always told me to be refined. Refinement is a virtue. Love is perfection."

Who is the father of the baby?

"It's my baby. It's my baby. I have a father. The Lord is the father of the universe."

Do you think there is anything wrong with your mind?

"Oh, God knows. Men are in the universe because the sky was made blue. Love is perfection. Virtue is a refinement."

Catatonic Types.—As compared with other forms of schizophrenia, which usually are insidious in their onset, catatonia is frequently abrupt. The most common reaction is one of underactivity, or *catatonic stupor*. Mildly stuporous patients are uncommunicative or speak in a monotonous voice. They have expressionless faces and require prompting and assistance in dressing and eating. Some assume peculiar postures and maintain them for long periods. The stiff, erect pose of a soldier is a favorite.

Markedly stuporous catatonics are bedridden, mute, totally inaccessible, and helpless. They usually are unclean in their personal habits and refuse to eat, so that they must be forcefully fed by spoon or by liquids poured directly into the stomach through a tube. The eyes may be closed or open. If the latter, they stare fixedly into space and blink rarely. While in a stu-

porous state, the catatonic appears to be completely isolated from what is happening about him, but on recovery he is often able to give a detailed account of past events.

The most striking feature of severe catatonic stupor is the marked rigidity or flexibility of the musculature. Some catatonics are so rigid that it is possible to suspend their body between two objects as if it were a stiff board. A springlike resistance is encountered when an attempt is made to bend a limb or to open a clenched fist. Other stuporous catatonics are extremely flexible. Their limbs may be molded like wax into any desired positions, and the imposed postures are usually maintained for several minutes. This waxy flexibility is called *flexibilitas cerea*.

Though impressive, the immobility of both types of catatonics has been exaggerated by many writers. While lying comfortably in bed during the day, catatonics occasionally remain motionless for two or more hours, but on the average they move slightly more often than once every 20 minutes. Under similar circumstances, normal individuals move once every 5 minutes. During the night, markedly stuporous catatonics continue to average one movement every 20 minutes as compared with normal individuals, who average slightly more than 10 minutes between moves (25).

After a period of several weeks or months, the stupor gradually or quickly lifts, and the patient returns to a normal state or goes to the opposite extreme and passes into a state of *catatonic excitement*. This form of excitement is unlike any other. The patient may be in perpetual motion, but he usually remains rooted in one spot. His movements are stereotyped and his excitement is devoid of emotional expression. He may talk incessantly, but his words are incoherent and repetitive. To the casual observer, his actions may seem weird and meaningless, since they are unaffected by external stimuli and serve no apparent purpose. Actually, however, there is reason to believe that the catatonic's activities are directed by inner motives. In response to hallucinations, delusions, and inner fears, patients occasionally become impulsively assaultive and destructive.

Catatonics suffer from some disorder of volition or will. At

times they are extremely negativistic and at other times they are abnormally suggestible. Muscular rigidity, for example, is an illustration of their negativism, and *flexibilitas cerea* illustrates their pliability. Some patients automatically obey all verbal instructions, even when it is not to their advantage to do so. Thus a patient asked to hold out his hand so that the examiner may stick it with a sharp pin will automatically hold out his hand, without any show of emotion, as often as requested.

In extreme instances catatonics will automatically repeat the words or the actions of another. The former condition is known as *echolalia* and the latter as *echopraxia*. The repetition is compulsory rather than optional. It is a forced reaction that the patient is unable to resist. *Perseveration* is frequently encountered. A catatonic may repeat some stereotyped movement day after day, draw the same picture a thousand times, or repeat a senseless phrase over and over for hours.

Research in Catatonia.—Because of its dramatic nature, catatonia has been a favorite subject for research. It has been found that motor reactions characteristic of human catatonia may be duplicated in animals by the injection of certain preparations such as bulbocapnine (13) or heavy water (14), and also by producing lesions between the mammillary bodies and the third nerve (26). Although interesting, these observations are not particularly indicative of organic factors in catatonia, since catatonic patients present no significant biochemical disturbances or neurological lesions. The importance of experimental animal studies is also negated by the fact that typical catatonic motor symptoms may be easily induced, maintained, and abolished by hypnosis, a purely psychological phenomenon. A psychological explanation has been proposed by Guthrie (12), who maintains that the catatonic has purposely withdrawn from the world of reality and does not wish to be disturbed. His negativism, muteness, flexibility, and automatic obedience are active or passive expressions of his refusal to be annoyed by busybodies surrounding him.

A second field of investigation has been concerned with the therapeutic problem of abolishing the catatonic stupor. Results from this approach have been spectacular but disappointing.

Rigid or flexible catatonics may be completely aroused from the most profound stupor and restored to a normal physical and mental state by the injection of sodium amytal (2) or the inhalation of a gas mixture consisting of carbon dioxide and oxygen (22). The "cure" is unfortunately temporary. For a short period ranging from several minutes to a few hours, the patient converses and moves about in normal fashion. Then once again he sinks back into a stupor.

The thought content and subjective experiences of the catatonic constitute a third field of inquiry. Observations made by hospital personnel during the acute stages of the illness, together with retrospective reports submitted by cured patients, indicate that catatonics experience a rich mental life while in stupor. Furthermore, there exists an intimate relationship between their mental thoughts and their physical reactions. It appears from these studies (32) that the motor symptoms of the catatonic are most frequently symbolic dramatizations of sexual conflicts, death, and rebirth. The attitude and manifestations of catatonia suggest especially a feigned death reaction to fear. Death provides a final solution of difficulties, an escape to a blissful state of freedom and peace.

An interesting description of the subjective experiences and thoughts of a catatonic has been reported by Fraser and Sargant (9). This case is outstanding because the patient was a brilliant student with an IQ of 140. While ill, she was in a catatonic stupor that was periodically broken by impulsive activity. After recovering, she wrote a description of her illness. The following excerpts are taken from her retrospective account.

On going shopping with Mummy in the bus, I felt faint, and we went into the house of some great-aunts of mine. After lying down for a while and drinking some milk, I went home again and worried all day about having a baby. I was then taken to the hospital, after a night at home when I thought I was going to die. There I remember a bell tolling all day, and the parting with Mummy, and being in a room with a very quiet nurse, and having carphones on, and hearing music and voices. I had a bell beside me which I rang and called out the names of people, and I remember seeing a building out of the

window sink into the earth with Mummy standing straight at one of the windows, and Daddy waving to me.

Do not remember much about the next part except for a day nurse and several night nurses, my meals, and a bath every day, and trying to escape into a long passage, and imagining I was in India, and doing various gymnastics in the room.

Eventually I came to the Villa and was in a small room from which I had a great desire to escape, especially on going to and coming from treatment in the mornings. The open door was a great temptation, and also to grab other people's fruit and beds.

I had three private nurses. The first I was scared of, because she was so large and would not let me drown myself in the bath. The night nurse I fought with because every time I woke up from the sleeping draught, I used to see her having a meal and this awoke the greedy instinct in me. The third nurse I got on well with at first, as she was very quiet, but on coming into the ward I felt I wanted peace and did not need a nurse any more. However, they must have had to put up with a great deal, and I should like to apologize now for all the trouble caused.

When Mummy and Daddy came, I always wanted to leave with them, but gradually I became resigned and began to take an interest in the other patients. I had various imaginations or delusions such as being in a tomb, being a bug in a rug and being abroad. I had a feeling that I did not deserve the food that was brought to me, though it was very welcome.

One of the strangest impressions was that of being in a tomb when I came over to this hospital. I imagined that I had already died and that this was the afterlife, also that the nightgowns were shrouds. I imagined that I had not been given a proper funeral because I thought my soul had not been saved. On first going out into the garden, I thought I was seeing other people who had also died and that we were all walking in Heaven.

Nearly everyone whom I saw appeared to me as being either relations or friends of well-known people. For a time I thought that Sister was the Bishop of London, that nearly all the doctors were uncles of mine, and the Villa was sometimes a tomb, occasionally a prison, and for a time I thought it was a ship.

Concerning the voices which I heard, I do not remember very well what they said, except for a few sentences about there being no hope, and something about it being right to go mad. I remember one sentence well, which said, "Go and tell your Mother you are mad and

then you will have done it," and I did go into the next room and I told a woman who was lying there and who I thought was my Mother this sentence, and she appeared to be very frightened. When I went back to my room and listened in again the voices said, "Well done!" Another sentence which I remember hearing the voices or someone say was, "You cannot help us until you have washed your hair." I do not know to whom this was referring, but it made me put my head in the bath nearly every day, and a little of the drinking water was always poured over my head every day before dinner. However, this idea soon faded away.

Going home for the first time seemed very strange, and I expected that I was going to be murdered. It was lovely to meet my sister again. The next time it was very much more easy to talk. Life became much more peaceful later, and I have had time to think for the first time in my life and it seems to me at present that although I am young there is not enough peace and thought in this world, and too much rush, but I have already had a full and enjoyable life since leaving school.

Paranoid Type.—Paranoid patients are suspicious, sensitive, egocentric individuals whose lives revolve about the theme of persecution. They imagine that people are against them and in devious ways are maltreating or plotting against them. At first their delusions of persecution are limited and fairly well systematized and their attitude toward the world is one of emotional aggressiveness. Later their delusions become numerous, incoherent, and absurd, and their aggressiveness subsides.

The delusions of the paranoid are reinforced by persecutory hallucinations. They hear enemies calling them names and threatening them, see faces at night, taste poison in food, feel currents operating on their bodies, and are overcome by the peculiar gases discharged in their rooms. Fear of the omnipresent and persistent enemies may eventually drive the paranoid to homicide as a measure of self-defense, or to suicide as a form of escape. A homosexual component is detectable in some instances, the delusions and hallucinations being thinly veiled defenses against, or projections of, latent inversion. In keeping with this interpretation, it is usually noted that male patients have male persecutors and female patients have female persecutors.

Many paranoids have delusions of grandeur that conveniently "explain" why they are being persecuted. They are persecuted because others envy their wealth, intelligence, fame, and family connections. This strange mixture of persecution and grandeur is also noted in the *ideas of reference* expressed by many paranoids. Ideas of reference consist in attaching personal significance to incidental occurrences. An automobile horn sounding in the night is to most people a commonplace and meaningless stimulus; but to a paranoid who regards himself as the center of the universe, the blare is a signal from his persecutors. Similarly, if a paranoid observes a group of individuals talking together, he is convinced that they are talking about and against him.

In the following interview, a schizophrenic paranoid patient presents delusions of persecution and grandeur, ideas of reference, and hallucinations.

Who are you?

"I am a scientist and a universal doctor."

What kind of a scientist are you?

"I am a graphologist and astrologist. By the stars I see you are going to die in 1967. When the right girl comes along for me I will be able to recognize if she has physical and mental love for me by her handwriting."

Can you tell me more about this?

"I am connected with the psychic world and seer. I know the language of the birds. For example, when they fly in three formation, it means a 1, 2, 3 sentence which means throne."

Do you get along well with your neighbors?

"No, I have been having arguments with them for 17 years. They annoy me. One time when I went to have my battery recharged, they put something in it to make it dissolve and give off a peculiar odor. Every time they go by my place they toot their horns to get me all excited."

What was this odor like?

"I don't know. Maybe it was a kind of poison gas."

What else do the neighbors do?

"They put all kinds of lies in the papers about me."

What paper?

"The morning paper. They change the names around so they will puzzle people."

What names do they substitute for you?

"Hitler and Mussolini."

Are you Hitler?

"I don't know. You can tell by the stars and my handwriting."

Do you think you have a special mission in life?

"Why, yes. God has willed that I come here to cure these patients. Only this morning I was working on a cranky patient. I transferred my psychic mind to him and after a while I made him lie down and keep quiet. Tomorrow I want one of the medical offices reserved for my healing."

Do you hear God talk to you?

"No. He communicates his desires to me by celestial signs. He sent me a message this morning in a form of a cloud."

What was the message?

"That's a secret."

ETIOLOGICAL AND PREDISPOSING FACTORS

Heredity.—Although psychiatrists are not in complete agreement on this point, recent studies indicate that heredity is the basic factor in determining predisposition to schizophrenia. The most extensive and conclusive genetic study is that of Kallmann (16), who investigated the families of over 1,000 schizophrenic patients. As compared with an expected incidence of approximately 1 per cent for the general population, he found that about 16 per cent of the children, 12 per cent of the siblings, 8 per cent of the half siblings, and 4 per cent of the nephews, nieces, and grandchildren of schizophrenic patients may be expected to develop the same disease. In those instances where both parents are schizophrenic, the probability is that 68 per cent of the children will also become schizophrenic. The etiological significance of heredity is further confirmed by twin data. In a study of identical and fraternal twins, selected on the basis that one member of each pair was a schizophrenic, Kallmann (17) found that

the other twin was also schizophrenic in 86 per cent of the identical twin cases and in only 15 per cent of the fraternal twin cases. Both co-twins were affected in 68 per cent of the identical, and 15 per cent of the fraternal, pairs examined by Rosanoff and his associates (27).

The above twin data have been interpreted by some writers as proof that heredity factors alone do not suffice to produce schizophrenia. Their argument is that if heredity were the only cause, then all the identical co-twins of schizophrenic patients should be similarly affected. The fact that from 14 to 32 per cent of the identical twins of patients are free of symptoms suggests that environmental factors may also play a contributory role.

An equally sound genetic interpretation is offered by Kallmann (16). He finds that the inherited characters that predispose an individual to schizophrenia are transmitted by a single recessive gene pair, but that the overt manifestation of clinical symptoms is inhibited in from one-fourth to one-third of the taint carriers because of the interaction of protective constitutional factors. This does not necessarily mean that faulty social and emotional habit patterns, conflicts, and environmental stresses are without significance. Developmental and external factors may facilitate or precipitate the overt expression of schizophrenic symptoms in predisposed individuals, but there is no evidence that they are essential or that by themselves they are capable of producing schizophrenic reactions in individuals of sound inheritance.

Physical Basis.—From time to time, various cortical, biochemical, and endocrinological abnormalities have been observed in schizophrenic patients. Subsequent workers either have failed to confirm these findings or have demonstrated that such abnormalities are incidental and by no means specific or characteristic of schizophrenia (6, 24). Although more variable, the brain rhythms, or electroencephalograms, of schizophrenic patients are not clearly differentiated from those of normal individuals (21).

Constitutional Factors.—All varieties of body builds are found among schizophrenics, but mainly because of their youthfulness about two-thirds have asthenic (slender) or athletic physiques. Asthenic features are most prevalent among hebephrenic pa-

tients, and athletic physiques predominate among patients of the paranoid type (5). With respect to temperament, schizophrenics tend to be quiet, sensitive, introspective, self-contained, and socially reserved. They are described as introverted, shut-in, and schizoid personalities. Although accentuated by the disease process, these personality traits are also observed during the pre-psychotic period. Children who in later years become schizophrenic exhibit all types of personality traits, but introversion predominates over extroversion. They are usually lonely, timid, hypersensitive youngsters who do not mix easily with other children. They prefer daydreaming to active social participation and quiet pastimes to vigorous games.

TREATMENT AND PROGNOSIS

Treatment.—Although home care is possible in certain cases, it is desirable to hospitalize most schizophrenic patients. Before the introduction of shock therapy, treatment was essentially limited to general supervision, medical and nursing care, occupational therapy, and psychotherapy. In recent years, insulin therapy, which has proved more effective than other shock techniques in the treatment of schizophrenia, has been extensively used.

Spontaneous Recovery.—In the absence of any special form of treatment, about 30 per cent of schizophrenic patients are discharged from mental hospitals within two years of admission—23 per cent as recovered or improved, 7 per cent as unimproved (10, 23). These figures, confirmed by follow-up clinical examinations (29), are based on unselected patients admitted to large public mental hospitals. Private and semiprivate institutions that select their cases and provide more intensive individual treatment report recovery or improvement in about 40 per cent of patients treated for an average period of one year (7). In general, catatonics have a higher rate of amelioration than paranoids, and paranoids have a higher rate of improvement than hebephrenics. Intelligent patients have a better prognosis than the nonintelligent, and schizophrenics with sturdy physiques respond more favorably than asthenic patients.

Follow-up studies, conducted 5 to 10 years after hospitalization, show that about 50 per cent of schizophrenics are still in mental hospitals, 30 per cent are in the community, 10 to 15 per cent are dead, and the remainder are unaccounted for (10, 29). Twenty-seven per cent remain in mental hospitals less than a year, and 42 per cent are hospitalized for at least 10 years (11).

Outcome Following Shock Therapy.—The immediate effects of insulin therapy are very favorable. From 50 to 60 per cent of insulin-treated patients, as compared with 20 to 30 per cent of untreated cases, show clinical improvement. Unfortunately, the immediate effects following insulin therapy are not permanent. A substantial number of recovered or improved cases relapse. In a follow-up study of a large number of patients, Ross and his associates (28) found that two years after treatment 57 per cent of insulin-treated patients were still in hospitals and 37 per cent were in the community. These follow-up figures are only slightly more favorable than those based on patients receiving only routine hospital treatment. Nevertheless, insulin therapy is generally regarded as a valuable contribution to the treatment of schizophrenia since it shortens the duration of hospital stay in many cases and hastens recovery in favorable cases. Metrazol and electroshock therapy have both proved ineffective in the treatment of schizophrenic patients. The percentage of cases benefited by these convulsion therapies is no greater than for untreated cases (8).

Eugenics and Sterilization.—It has been estimated that compulsory sterilization of all schizophrenic patients would at most reduce the incidence of this disease in the subsequent generation about 4 per cent. This estimate is based on the fact that only 10 per cent of schizophrenic patients are descended from schizophrenic parents and that 62 per cent of the children of schizophrenic parents are born before the onset of the disease in the parent. To some extent, schizophrenia is biologically self-limiting. Only 50 per cent of schizophrenics marry, 47 per cent have children, and 23 per cent have grandchildren. However, this tendency toward self-elimination falls far short of complete eradication. As a recessive disease, schizophrenia is often transmitted through relatives of patients who, although free of overt

symptoms, are latent carriers. Effective reduction of the incidence of schizophrenia would require prevention of the birth of the 90 per cent of schizophrenic patients born to parents who are not personally affected but who are latent carriers. If these individuals refrain from marrying persons who also have schizophrenic relatives, the recessive taint will be held in check, and their offspring will not be overtly affected (16, 19).

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CHAPTER XII

MANIC-DEPRESSIVE PSYCHOSES

Manic-depressive psychoses include a variety of emotional disorders for which no definite physiological pathology has been demonstrated. Symptoms are usually of a manic or depressive type, but mixed manic-depressive reactions are occasionally noted. The main characteristics of the manic phase are general excitement, elation of mood, flight of ideas, and psychomotor overactivity. Conversely, the principal symptoms of the depressive phase are general retardation, emotional depression, poverty of ideas, and psychomotor underactivity. Mixed states include various combinations of manic and depressive features, for example, simultaneous restlessness and mental depression, or emotional exuberance associated with dearth of ideas.

Incidence.—About 1 out of every 200 individuals may be expected to develop this disease during his lifetime. From 10 to 15 per cent of all persons annually admitted to mental hospitals are manic-depressive patients. With respect to clinical type, about 40 per cent of first admissions are classified as depressed, 35 per cent as manic, and the remainder as mixed (1). Attacks may occur at any age from puberty to old age. The average age of patients at time of first admission to a mental hospital is about forty. Approximately 25 per cent of first admissions are under thirty years of age, 50 per cent are between thirty and fifty, and 25 per cent are over fifty. The disease occurs at an earlier age in women than in men and is substantially more prevalent among women (11, 14).

ETIOLOGICAL AND PREDISPOSING FACTORS

Heredity.—There is considerable evidence that the predisposition to manic-depressive psychosis is inherited. The disease oc-

curs 30 times more frequently among the close relatives of manic-depressive patients than among unselected groups of the general population. As is noted in Table VII, close to 15 per cent of the brothers, sisters, parents, and children and 3 to 5 per cent of the

TABLE VII. INCIDENCE OF MANIC-DEPRESSIVE PSYCHOSES AMONG RELATIVES OF MANIC-DEPRESSIVE PATIENTS

Author or investigator	Relationship to patient	Expectancy rate, per cent
Rosanoff (16).....	Identical twins	70
Rosanoff (16).....	Fraternal twins	16
Slater (17).....	Children	16
Slater (17).....	Parents	15
Slater (17).....	Siblings	13
Slater (17).....	Uncles and aunts	5
Slater (17).....	Cousins	3
Slater (17).....	Nephews and nieces	3

cousins, nephews, nieces, uncles, and aunts of manic-depressive patients are similarly affected. As contrasted with these figures, only about 0.5 per cent of the general population may be expected to develop a manic-depressive psychosis. The importance of heredity is further emphasized by twin data. In those cases where one twin develops a manic-depressive psychosis, the co-twin is similarly affected in 70 per cent of identical pairs and in only 16 per cent of fraternal pairs.

As yet, no satisfactory theory has been advanced to explain the genetic basis of manic-depressive psychoses, but it is probable that more than one gene pair is involved. The high incidence of this disorder among close relatives suggests that the mode of transmission is of a dominant or partially dominant, rather than of a recessive, type. Since the manifestation of an inherited quality may be repressed or facilitated by the action of other genes, the greater prevalence of manic-depressive insanity among women than among men may be attributed to the restraining in-

fluence of male constitutional factors or to the facilitating influence of female ones.

Environmental Factors.—The finding of Rosanoff and his co-workers, that 30 per cent of identical twins of manic-depressive patients are free from the disease, indicates that hereditary factors in themselves do not invariably result in a psychosis. External environmental factors probably exert a modifying influence with respect to the outward manifestation of symptoms in a substantial number of predisposed individuals. What these environmental influences are is not known. Among the more common precipitating causes mentioned in case histories are physical illness, childbirth, financial reverses, loss of employment, death in the family, and disappointment in love. Some or all of these factors may precipitate attacks in selected instances, but it is important to note that they provoke psychotic reactions only in individuals who are susceptible to manic-depressive insanity. The same external factors do not precipitate psychoses in individuals of sound inheritance. In short, environmental factors do not cause manic-depressive psychoses, but they may act as catalytic agents.

Physical Factors.—The cyclical changes in mood and psychomotor activity are suggestive of some underlying biochemical or endocrinological disturbances. However, experimental findings to date have been contradictory and inconclusive (12). The brain waves of manic-depressive patients do not differ from those of normal people, and there is no significant change in the electroencephalograms of manic or depressed patients upon recovery (6).

Constitutional Factors.—Approximately two-thirds of manic-depressive patients are thickset, well-rounded individuals. The late age of onset, together with the normal tendency to put on weight during middle life, in part accounts for this finding. However, even when corrections are made for age, it appears that stocky individuals are slightly more susceptible to this disorder than are the lean and slender (4). With respect to prepsychotic personality, the great majority are sociable, energetic, and extroverted. It is relatively rare for shy, seclusive, and eccentric individuals to develop manic-depressive insanity.

MANIC PHASE

Psychomotor Activity.—The clinical picture is dominated by pressure of activity. Manic patients cannot relax or remain inactive. They are feverishly active 20 hours a day. Passing thoughts and urges are impulsively translated into action. A thousand things, all trivial, must be done immediately. They rush madly from one task to another. No sooner have they started one thing than they are off on another. They are so busy that they accomplish nothing. If unrestrained, they undertake numerous business enterprises, engage in multiple love affairs, or involve themselves in entanglements of all kinds. When hospitalized, they talk incessantly, busy themselves with the affairs of others, and get in everyone's way. Female patients frequently dance about the ward, and male patients walk to and fro for hours. They sleep only about four hours and spend the rest of the night singing, talking, and tossing in bed (13). Feelings of fatigue are diminished, so that they must be carefully supervised to prevent exhaustion.

Flight of Ideas.—The marked distractibility of attention and crowding of ideas results in an uninhibited flow of words. When asked a question, the patient starts to answer it correctly, but passing thoughts and reactions to incidental external stimuli are soon incorporated into the response. The train of thought ceases to be dominated by a specific idea and becomes a disconnected flight of ideas. Sentences are rarely completed. The mere sound of words may call forth similarly sounding words leading to endless repetitions and irrelevant associations. Puns and rhymes are not uncommon. It is, however, possible to elicit specific and correct answers by repeatedly interrupting the patient whenever he starts to ramble and by asking pointed questions that require brief responses. The rate of speech is usually accelerated to keep up with the rush of ideas. Many patients are aware of their poor concentration but are unable to marshal their thoughts or screen out chance associations.

Emotional Reactions.—The dominant characteristic is an expansive state of well-being. The majority are jolly, somewhat

euphoric individuals who are inclined to be boisterous, tactless, and facetious. Their boasts and antics are more amusing than annoying. They exuberantly express themselves as being "on top of the world," "full of energy," and "superhappy." Their gaiety is spontaneous and entertaining. Erotic excitability is increased and unrestrained. Lacking inhibitions, they do not hesitate to use obscene expressions. Beneath their agreeable exterior is a heavy layer of conceit, irritability, stubbornness, and aggressiveness. If slighted or thwarted, they become arrogant, argumentative, assaultive, and violent. At such times a persecutory trend is often apparent. In many respects manic patients resemble intoxicated individuals. They are merry and humorous one moment, angry and abusive the next. It is practically impossible to subdue them. In spite of their instability and unpleasant traits, they are usually likable individuals.

Other Symptoms.—Perception is careless and faulty. The resulting illusions are sometimes erroneously interpreted as hallucinations. Delusions, if present, are simple and transitory. A patient may state that he is some famous person, but the jocular manner in which he makes such statements, together with the short duration of these ideas, indicates that he is not serious. It is a form of game that pleases his vanity and entertains his audience. Memory difficulties are often encountered, but they are due to distractibility and poor concentration rather than to actual impairment of memory. Because of the chronic excitement, there is usually a loss of appetite. In some cases care must be taken to prevent undernourishment. The exaggerated optimism and self-confidence of manic patients frequently results in faulty judgment. Under the sway of their emotions, they spend money freely and engage in dubious enterprises. As a general rule, they appreciate the fact that they are hyperactive and elated but vigorously deny that they are psychotic. They are adept at finding excuses for their nonsensical doings and regard their enforced hospitalization as a joke. It is the physicians and nurses, not they, who are mad.

Degree of Mania.—A distinction is usually made between mild and severe cases, the former being classified as *hypomania* and

the latter as acute mania, or *hypermania*. Similar symptoms are present in both conditions but they are much more intense in acute mania. The patient may pass directly from a normal state to either hypomania or hypermania. Some hypomanics progress to the acute stage and others remain at the mild level for the duration of their illness.

ILLUSTRATIVE CASES

Hypomania.—Abstract of an interview with a young unmarried woman. Observe the mild euphoria, the rapid shift from one idea to another, the circumstantial speech, and the tendency to be witty.

How are you today?

"Oh, I am superperfect. The state is only wasting their money keeping me here. How about a steak dinner tonight with peppermint ice cream? The service here is too slow. Why, there isn't a good nurse here. I could work circles around them."

Are you a nurse?

"Well, I don't have my R.N. yet but I have all of my requirements. You see, I'm too clever for you. Say, who is that nice young doctor you have here? Boy, I could go for him. I think I will marry a doctor, a rich psychiatrist, and then open up four or five private hospitals so I could retire at age thirty. I work fast. I could be the scrub nurse of the operation room and the superintendent of the joint. I want to be the big shot. My sister is a very brilliant girl. Her estimate is about 95 per cent. She is a senior in college. She admires medical men, any man with a brain. My mother's father was a doctor, a horse doctor, so you see it all traces back."

Would you tell me something about yourself?

"Have I got to dig that up again? I hope, I hope, I hope. Do I like men? Do I enjoy going to parties? I don't believe in going out with every guy. You have to use your head. I've got a good head. How do you like the profile? I don't believe in falling for a guy. I think I'm better than any guy anyway. I don't think much of myself, do I? I'm very conceited and very fussy and I don't eat things unless they are in courses either."

What led to your being brought to the hospital?

"I'm trying to tell you. I went to interview Mrs. Johnson for a job. I was working at Dr. S's house just to get acquainted with things and get a line-up of positions. I thought I might work into a clue even though I'm not a graduate. So anyway I got a job through a telephone call. She never saw me or anything. Her husband was a nice-looking guy. He had had some money but he lost it through drinking. I only drink to be sociable. Mrs. Johnson liked my appearance and personality and she said I would do as I looked neat. I don't care if I go out with a medical man or a factory man. I can still adjust myself to the environment. She liked me so well she invited me to accept a date with her son, who is a licensed engineer. They have a beautiful house; you should see it. She married a second time to a Greek. She asked me to come down and take her daughter out horseback riding, because I go in for all kinds of sports. I have a regular outfit I wear. Of course, I said I would but I was so busy I didn't get a chance to. I haven't a license but I do drive. I only know four policemen in town and if I get caught I probably would be in a jail instead of in this jail, but they wouldn't catch me because I'm awfully smart."

How did you happen to come here?

"I'm coming to that. I went over to the house to be interviewed for a job. I just walked in and observed the joint to see if I thought I would like it. I saw a big fat bug last night. It was nice and juicy but I had already had my dinner. She took all my references and all that stuff. She almost took my prenatal record. I started to work and worked from one to six without stopping. She has a lot to learn. I left there that night and started out to see my friend. He is a six-footer. We make a nice couple. Last year we won a dance contest. He is very good on the dips and he holds it and counts 1-2-3."

Hypermania.—Below is a record of the spontaneous flow of ideas elicited from an excited female patient in response to the single question, "Why are you in this hospital?" As compared with the above hypomania example, note the greater pressure, the more disconnected speech, and increased distractibility. This case also illustrates the common characteristics of manics to play with the sound of words and to use one word as a stimulus for

the next. Note the numerous puns, rhymes, and clang associations.

I came here to see the light. I want you to see with your eyes what you saw at night, by the light in the white night. How could you be a child and go into the wild? Kind sir, why are you so kind? Why did you drive a car to Buffalo on Route 20? You are twenty years old. Tell me, why did you send that card through the mail? Why do you look up? Why do gentlemen prefer blondes? Do you love your wife? You are beginning to get a little bald. You know babies are born without hair. Do you know why Leo, the lion, l-i-o-n, was lionhearted? Do you have a heart? Do you know what you are doing? Doctor, listen, doctor, doctor, doctor, d-o-c-t-o-r. Don't make mothers go suffering on. Don't go near the fireplace over there. Listen. You heard it in West Bloomfield. You saw the bloom in the fields. Why was the light blooming in the fields at night? You have got to have tools to work. Don't we need fish once in a while? Why do you write A B C's on the blackboard? You can see white and black. Say, listen, listen, listen, l-i-s-t-e-n, I can see your tiepin. It isn't right. Listen, pins, pins, pins, p-i-n-s. Look at that girl write down.

A car just went by. There is a calendar. Time, time, time, t-i-m-e, give you all you want. Do you see the saw? Do you hear the buzz? Do you see the buzz saw? The busy bee, the A B C. Say, listen, don't go away. I put Margie where she belonged. It was just like your hand. Is your hand still working? I was sitting on that chair. Why did you just write the alphabet, daddy, because you are going to become a daddy and daddy knew that if he kept cleaning and cleaning and working and who was Jack? There are so many kinds of jack. Jack and the beanstalk, Jack in your pants, jack pot, Jack and Jill. Daddy was kind to us, he was kind, he was kind. Weren't you kind? Weren't you good? You were working awfully hard. You understand you must look at a map. There was a girl and she was a bad girl and she had a bad map and this is what she did to me. She made me say something I wouldn't say and that's why I was still in school. Did you know they had stills in school? Just listen to the A B C's. Oh, the most beautiful thing, roses in bloom, roses in bloom. Is your name Rosenbloom?

I will tell you a story and this is going to be a short, short story and that's just fiction. You must listen. They don't want you to get up until the sun gets up. What time do my sons get up? What time

does my one son get up? What time do my two sons get up? What time do my three sons get up? Doctor, tell me when does the sun get up? I wish you were a nurse. I can see the sun coming through there. I tried to see a little better in the light because I don't want to go through those A B C's the hard way. I want to see it over for you and I want a new husband. People all over the whole universe do not understand the situation, and they don't want mothers all over the world to go on twisting that ring on their finger. Please listen carefully. You have to hear more than that, doctor. Why did you send on Christmas Day of all days in that old calendar? Why must you sit down and write? Why did you have to write so beautifully? Why didn't you do it, but why did you send it and when I said that you didn't, you said to me, "I am sending you a line, just a line to let you know that we are married."

No, this was the way it had to be. You understand why the school is set just a little back off the road. Do you understand why you have those children, my two boys? I don't see quite far enough and I started to look up but you see, there is a cage up there. You will see a cage now. Don't you see how wrong you are? Don't you see how you done, Mr. and Mrs. and used her name? Don't we need a plane? There is a drawer in there under that desk. Who is that woman just sitting there? Does she have a name? And is she on my plane?

DEPRESSIVE PHASE

Inactivity.—There is an absence of initiative and energy. Decisions are difficult to make and painful to execute. The slightest task appears formidable. The patient remains in bed long after awakening because he does not possess the necessary strength and will power to get up. Once up, he must push himself to dress and attend to his routine duties. The weary limbs respond sluggishly and every movement is a struggle. Should he attempt to fight his inertia, he is rapidly overcome by fatigue. Rest periods are frequent and prolonged. Activities are gradually restricted. Unable to work, read, or visit with friends, the patient withdraws from the world and spends his time sitting in some quiet corner with bowed head. The more serious cases lie motionless in bed.

Mental Retardation.—The majority of patients complain of a paralysis of thought and an inability to concentrate. Their

minds are blank. The power of recall and self-expression appears to be lost. Great difficulty is experienced in arranging ideas, solving simple problems, or following the train of thought of a book or conversation. Spontaneous remarks are lacking. Direct questions are answered correctly but slowly. Speech is hesitant, monotonous, and monosyllabic. It is not uncommon for a depressed patient to stop in the middle of a sentence because he has run out of ideas or words. The voice is subdued. Some are totally mute. The inhibition of memory and blocking of thought creates an impression of mental dullness that is misleading. Actually, there is little or no intellectual impairment.

Emotional Reactions.—Gloomy hopelessness is the prevailing mood of depressive patients. Life holds no pleasure, interest, or purpose. They feel alone in the world and totally useless. Their suffering is acute and their grief inconsolable. The intensity of all physiological drives and psychological motives is markedly decreased. They have no appetite and are unresponsive to the usual forms of social stimulation. Reproachful of the past and pessimistic of the future, they regard suicide as the logical solution. Many are prevented by their inertia and moral training from making any serious attempts to end their lives, but the threat is always present. The general inhibition that pervades the motor and mental processes also includes the emotions. Neither joy nor sorrow is fully experienced. Pleasant or humorous incidents evoke no smiles, and the chronic sadness is usually unaccompanied by tears. In some cases the passive depression gives way to irritability, ill-humor, apprehension, and bitter self-condemnation.

Other Symptoms.—Ideas of unworthiness and hypochondriacal delusions concerned with physical defects, digestive disorders, and general ill-health are prevalent. Another frequent complaint is insomnia. Some patients report feelings of unreality. The world and its inhabitants seem strange and unreal. Orientation is usually well retained.

Insight.—Depressed patients realize that they are mentally sick and often voluntarily seek treatment. Self-understanding, however, is biased by their gloomy outlook. A commonly stated fear is that they will become incurably insane. Although ad-

mitting favorable recovery from previous attacks, they are convinced that they will never be well or happy again.

Degree of Depression.—This may range from mild depression, dismissed as a prolonged "spell of the blues," to a stuporous condition characterized by mutism, forced feeding, and confinement in bed.

ILLUSTRATIVE CASE

Here is an abstract of an interview with a moderately depressed middle-aged woman. Note especially the generalized gloom, the lack of initiative, the loss of interest, and the brevity of her responses. Insight is good.

Have you been in a mental hospital before?

"Yes."

How many times?

"Twice."

How are you feeling now?

"Well, sort of sad and low in spirits."

Can you compare your present feelings with how you feel when you are well?

"When I was well, I woke up in the morning and was eager to get up and do my work. Now I find it very hard to do anything."

How do you feel now when you awake in the morning?

"Well, I want to stay in bed and have to force myself to get up and dress."

How do you feel after you are up and dressed?

"Why, I just want to stay in one place and do nothing."

Do you sleep well?

"Yes. It sometimes takes a little time to get to sleep, that is all."

Do you have a good appetite?

"No, I am not very interested in eating."

Why is that?

"Well, the food has no taste, for one thing."

What ideas run through your head now?

"I just feel as if I didn't care about going on."

What do you mean?

"Oh, I'd be better off dead."

Would you tell me more about that?

"Oh, I never tried to do anything. I merely thought of it as an escape."

Escape from what?

"I don't know. Just from myself, from the despondency."

What makes you despondent?

"I don't know."

Did anything happen to upset you?

"No."

Do you have many worries?

"Oh, I worry some about myself, just trivial things."

What do you mean?

"Oh, just about my appearance."

Is this a recent worry?

"No, I've always worried about that."

What do you do all day?

"Not very much."

Do you read?

"No, I look at the headlines sometimes."

Did you read when you were at home?

"Yes, I belong to the Book of the Month."

Why don't you read here?

"I try to, but I can't get interested in what I read."

Do you think you are as mentally alert as when you were well?

"No. I can't retain what I read and I find it difficult to discuss anything with other people."

Can you explain that a little more?

"The words don't come as easily as they did before."

Anything else?

"I don't grasp things like I did before."

Do you enjoy listening to music?

"I used to."

And now?

"I have no feeling for it."

Is your husband responsible for your being here?

"No, I suggested that he bring me here."

Why?

"I was despondent and felt I needed some protection."

Do you think you would have harmed yourself if you had stayed home?

"I really don't know."

Do you want to get well?

"Why, certainly!"

How does the future look to you now?

"Not very bright."

MIXED STATES

During the course of an attack, some patients gradually progress from a manic to a depressive state or from a depressive to a manic phase, with no intervening period of normal health. It is especially at such periods of transition that varying combinations of manic and depressive symptoms may occur simultaneously. Kraepelin (10) lists six principal types: irascible mania, depressive excitement, unproductive mania, manic stupor, depression with flight of ideas, and depressive state with flight of ideas and emotional elation.

ILLUSTRATIVE CASE

Notice the gradual transition from a depressive phase to a state of excitement and overactivity without elation.

Shortly after being rejected for insurance because of poor health, Mr. R became despondent and lethargic. He began to worry about finances and the fate of his family, refused to eat, and was unable to sleep. A picture of despondency, he spent all his time in a particular chair. When spoken to, he rarely answered. Upon the advice of the family physician, Mrs. R arranged for her husband's admittance to a mental hospital. For several weeks Mr. R continued to be sad, inactive, and uncommunicative. He then gradually became irritable,

abusive, and overtalkative but at the same time was physically inactive. He would lie quietly in bed but scream and shout. Whenever his wife visited him, he would shower her with profanity and accuse her of plotting against him. A few days later the psychomotor retardation disappeared and he became restless and violent. This condition lasted for several weeks and was followed by a return to normal health.

TREATMENT AND PROGNOSIS

Treatment.—It is desirable to hospitalize most manic-depressive patients. In addition to providing better physical care, hospitalization removes patients from disturbing home influences and is a protective measure against suicide and irresponsible behavior. An important factor in the treatment of manic cases is to diminish outside stimulation, gain the patient's confidence, and eliminate unnecessary restraints and sources of irritation. It is usually advisable to encourage depressed patients to take walks, read, and work with their hands. Depressed patients should be assured of their eventual recovery and urged to take a more optimistic outlook. Symptomatic relief may often be obtained through medication and physiotherapeutic aids. Prolonged warm baths have a beneficial quieting influence on excited cases, and the administration of sedatives enables the physician to control the severity and discomfort of symptoms. Some psychiatrists recommend psychological treatment during lucid intervals as a means of fortifying the patient with self-understanding against subsequent attacks.

Time is the greatest healing agent. In the majority of cases, the disease runs its course and terminates in recovery within a few months in the absence of any special form of treatment. However, recent investigations indicate that the duration of an attack may be shortened and the incidence of recovery increased by prolonged sleep therapy or convulsion therapy. The former, which is less effective, consists of putting the patient to sleep by means of drugs for a period of a week, with occasional periods of wakefulness for feeding purposes. Shock therapy involves the periodic induction of convulsions. This may be done by injecting a convulsant drug, metrazol for example, or by the

passage of an electric current through the intact cortex. Results obtained by metrazol and electroshock therapy are roughly comparable, but the latter method has the advantage of greater simplicity and absence of fear. Insulin therapy is ineffective (5, 7).

Outcome.—Prognosis is essentially favorable. Even before the introduction of special forms of treatment, about 70 per cent of manic-depressive patients recovered within one year of hospital admission (9). Frequently the duration of an attack is less than six months. Five years after admission, approximately 60 per cent are classified as recovered or improved (3). The use of metrazol and electroshock convulsive therapy has increased the rate of recovery or improvement to 75 to 80 per cent (2, 5). When recovery occurs, it is complete. The patient is fully restored to health, with no impairment of personal, social, or occupational efficiency. In general, attacks occurring during early adulthood and those marked by sudden onset have a more favorable prognosis than those occurring in late middle life or those characterized by gradual development.

Recurring Attacks.—Approximately 60 per cent of all manic-depressive patients admitted to mental hospitals during a specific year are first admissions, and 40 per cent are discharged patients who, after a period of mental health, have had a recurrence of psychotic symptoms leading to hospital readmission. This fact, together with the occurrence of repeated attacks in certain selected cases, has led to the widespread belief that manic-depressive psychosis is a recurring disease. Actually, most manic-depressive patients have only one attack during their lifetime of sufficient severity to warrant hospitalization. In a follow-up study of cases over an 18-year period, Fuller (8) found that 75 per cent were hospitalized only once. Although heavily weighted in favor of recurring cases, data based on patients who die in mental hospitals also emphasize the predominance of single attacks (15). Patients having recurring attacks usually exhibit the same type of symptoms during subsequent periods of illness, but in some instances a manic phase may be followed by a depressive phase, or vice versa.

EUGENIC ASPECTS

Manic-depressives marry as freely as normal individuals, and their fertility rate is closely similar to that for the general population. Because of the late age of onset of the disease, less than 10 per cent of the children of manic-depressive patients are born subsequent to the parent's first admission to a mental hospital (11). Since, as has been indicated on p. 263, 15 out of every 100 patients are descended from manic-depressive parents, it is evident that widespread sterilization of manic-depressive patients at time of initial hospitalization would have a negligible effect on the prevalence of the disease in the subsequent generation. At most, this procedure would reduce the future incidence rate by about 2 per cent.

As in the case of schizophrenia, the prevalence of manic-depressive psychoses may be appreciably decreased only if all healthy but heterozygous blood relatives of manic-depressive patients refrain from having children. Even if feasible, this would not be a desirable program. Many manic-depressive patients and their relatives are of value to society. When free from symptoms, they are often capable of great enterprise and achievement. As a group, they are slightly above average with respect to socioeconomic and educational status. The proportion of manic-depressives who have attended college is twice as high as that for all other psychoses combined (1).

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CHAPTER XIII

INVOLUTIONAL MELANCHOLIA AND PARANOIA

INVOLUTIONAL MELANCHOLIA

Depressive reactions marked by agitation, self-condemnatory trends, and hypochondriacal delusions and having their initial onset in late middle life are classified under this heading rather than with the manic-depressive group. As implied by its name, this is a disorder of the involutional period of life when the organism undergoes various physiological changes associated with gradual physical and mental decline. The median age of patients at their first admission to mental hospitals is fifty-one for women and fifty-five for men. More than 90 per cent of first admissions of either sex are between forty and sixty-five years of age. Involutional melancholia is more prevalent among women than men. It accounts for 2 per cent of male, 7 per cent of female, and 4 per cent of total first admissions to mental hospitals (15).

Symptomatology.—The onset of the disease is gradual. Frequently it is precipitated by some distressing experience such as loss of position, death in the family, or financial reverses. Early symptoms include loss of weight, insomnia, headache, lack of interest in usual activities, worry, poor concentration, and low spirits. As the psychosis develops, the clinical picture becomes one of great misery and despair. The outstanding affective features are profound dejection, agitation, and apprehension.

Although the great majority of patients have led exemplary and useful lives, they torture themselves with false self-accusations. They claim that they have committed unpardonable sins, ruined themselves and their friends, deceived people who trusted them, and engaged in unspeakable crimes against man and God. They blame themselves for the evils of the universe. The past is combed for trivial misdeeds and indiscretions, which are magnified a thousandfold. Because of their wickedness, God

has forsaken them. They have no hope of salvation. They are doomed to poverty, some calamity will soon befall their children, death is imminent, or, what is far worse, they are destined to live forever. At times they beg for mercy and ask to be spared, but more often they beg to be punished, tortured, put in prison, or killed outright. Often they refuse food, on the ground that they are undeserving of it. If not carefully watched, a large number would commit suicide.

Nihilistic delusions are prevalent. They declare that nothing is real, everything has changed, and life has lost all meaning. They claim that they are no longer capable of experiencing any sensations or feelings. Some express bizarre hypochondriacal delusions: their body has shrunk; their brain has rotted away or is a solid rock; they have no stomach; their blood has turned to water or dried up; etc. Paranoid features are noted in some cases. Common physical symptoms are poor appetite, pressure sensations in various parts of the body, gastrointestinal disturbance, and general physical weakness.

In marked contrast with the severity of emotional reactions, the higher mental faculties are not noticeably affected. Consciousness is clear and memory is good. Patients are correctly orientated, have fair insight into their condition, and realize that they are ill. Questions unrelated to their symptoms are easily grasped and intelligently answered (10).

INTERPRETATION

Endocrine Factors.—During the involutional period, the glands of internal secretion undergo radical change in function. In women an evident change of life is ushered in by the menopause, and a similar climacteric associated with decline of sex function is assumed to occur a few years later among men. Some writers maintain that these endocrine readjustments are responsible for involutional melancholia. There is, however, some question whether the psychosis is a direct result of the endocrine revolution or whether it is an indirect psychological reaction to the physical and mental decline associated with this period.

Experimental evidence favors the latter interpretation. If the

disorder were the direct result of endocrine upheaval, it should respond favorably to endocrine medication. Up to the present time, endocrine therapy has proven ineffective as a curative agent. A second argument against the endocrine theory is that the onset of involutional melancholia in women generally occurs 5 to 10 years after the menopause, in some cases as much as 20 years later.

Psychological View.—Psychological theories interpret this psychosis to be an accentuation of preexisting traits which, in turn, are part of the individual's constitutional make-up. Long before the onset of the disease, the majority of involutional patients are shy, stubborn, frugal, overconscientious, and inhibited. They are serious-minded individuals whose lives are governed by a strong sense of duty and rigid moral principles. Their interests are primarily confined to their family and work. They have few friends and care little for recreation. Many are chronic worriers (17). As long as physical vigor and the enthusiasm and optimism of early adulthood remain, they manage to make a fair adjustment to life. Although they rarely attain great heights, they are moderately successful, and there is always the possibility that the future will bring greater achievement.

With advancing age come disappointments and fears. Life is spent. Lifelong ambitions will never be realized. Women face the loss of two prized assets, their physical attractiveness and their childbearing function. Because of declining stility, men become insecure in their positions and fearful of retirement and poverty. The home, which for many is the center of attention, becomes disrupted through the marriage of children and death of the spouse. The external world no longer holds anything of interest, and since things seem real in proportion to the amount of interest we invest in them, the involutional patient's world becomes a shadowy, unreal place. All attention is now turned upon the self, and the patient is concerned only with the insecurity of his life, his bodily afflictions, and the unhealthy state of his soul. All three topics of preoccupation suggest death, the inevitable goal which is simultaneously sought and feared (11, 12).

ILLUSTRATIVE CASE

The following dialogue is an interview with an involuntional melancholia patient who had been a successful businessman.

How do you do, John? This is a lovely day, isn't it?

"Yes, it is a lovely day for you, not for me. There have been no lovely days in my life."

Don't you find life pleasant?

"How can I, when I haven't any stomach, heart, kidneys, or brains? I am helpless and worthless. I haven't a single friend."

Surely you have some friends?

"I may have had, but no more. I have ruined all of them. I am everything that is bad. I am rotten through and through. There is no hope for me. I am brainless."

Your friends and employers speak highly of you.

"I never really worked. I cheated them all my life. All I did was put in my time. Now they are ruined too. They shouldn't have paid me."

Why are you so self-condemnatory?

"Well, doctor, I have participated in the worst kind of filth. Can't you tell by looking at me? Can't you smell it? Everyone else can. I have no money. The bank is going to take over my home and my sister's home and then they will starve because of my misdeeds. I am worthless. I have had a terrible disease since I was six years old. I haven't a brain in my head. I belong in the bottom of the river."

What is this disease you have?

"It has poisoned all my body and now the odor is contaminating the world. Because of my sins, the whole world will be punished."

What sins have you committed?

"The unpardonable sin—the unpardonable sin. Why can't you throw me in the river? I don't deserve to live."

What is this unpardonable sin?

"It is too awful to talk about. There is only one solution."

And what is that?

"The river."

Why must you end your life?

"What else can I do? I have got to go into the river because of my sins. You see, I never went to church. Everyone that knew me knows all my habits. The foulest kind of habits. I have been immoral—contrary to all nature."

Is anyone trying to harm you?

"No, not that I know of."

Have you ever seen visions or heard imaginary voices?

"No, I haven't."

Do you think there is anything wrong with your mind?

"I haven't any mind. I am a brainless criminal—the cause for all the calamity in the universe. Why don't you let me roll in the river with a terrible splash?"

TREATMENT AND PROGNOSIS

Because of the great danger of suicide, it is desirable that these patients be placed in mental hospitals, where they will be under constant supervision. Routine treatment consists of the maintenance of good physical health through rest and adequate diet. Occupational therapy is of value in stimulating the interest of the patient and encouraging a favorable attitude toward recovery. Psychotherapy during the acute stage is ineffective. Some workers have reported favorable results with endocrine medication, especially theelin, but the consensus is that endocrine therapy offers more promise than fulfillment (13, 16). Recently it has been noted that most of these patients respond favorably to convulsive shock therapy and prefrontal lobotomy.

General Outcome.—From 30 to 40 per cent of patients receiving routine hospital treatment recover or improve (3, 16). This rate may be increased to over 70 per cent by means of metrazol or electroshock convulsive therapy. The two procedures are about equally effective, with electroshock being simpler and less disagreeable to the patient (6, 13). In general, younger patients of an extroverted make-up who, during the course of their illness, are cooperative and show much emotional reaction have the

best prognosis. Chronic cases of agitated depression or involuntional melancholia that have been unsuccessfully treated by other techniques frequently respond favorably to psychosurgery. As described in Chap. X, this is a radical brain operation in which the fiber tracts connecting the prefrontal lobes and the thalamus are severed (7). Insulin therapy is ineffective.

PARANOIA AND PARANOID CONDITIONS

Paranoia is a constitutional mental disorder that is limited in symptomatology to well-systematized and stable delusions of persecution and grandeur. The delusional system is skillfully and logically elaborated, so that if the fundamental hypothesis (which is often inaccessible to examination) is granted, the ideas expressed appear reasonable and probable. Apart from their unshakable delusions, paranoiacs are sensible and coherent in their thinking and behavior. Hallucinations and gross disturbances in memory and conduct are lacking. Emotional reactions are in accord with ideas expressed. The majority are self-supporting and often capable individuals of high intelligence who do not require prolonged institutional supervision. As long as they refrain from discussing their delusions or attacking their alleged persecutors, they are regarded by their associates as somewhat odd but essentially normal persons.

With respect to abnormalities in behavior and resistance to deterioration, *paranoid conditions* lie between paranoia and the paranoid form of schizophrenia. Delusions of persecution and ideas of grandeur are less bizarre and changeable than those observed in schizophrenia, and less reasonable and logically elaborated than those encountered in paranoia. Thinking is somewhat disconnected, and hallucinations are common. However, patients with paranoid conditions show little, if any, impairment in the intellectual and emotional spheres with the passing of years. Once developed, the disease process tends to remain stationary. Like paranoiacs, these patients are usually capable of self-management in the community, but on occasion their persecutory ideas may render them dangerous.

Incidence.—Every community has its fanatical reformers, eccentric prophets, litigious nuisances, crank letter writers, and “exploited” inventors. Such individuals usually suffer from paranoia or paranoid conditions, but they are hospitalized only when they create serious public disturbances or endanger the welfare of others by threats or homicidal attempts. They constitute only 2 per cent of first admissions to mental hospitals. With rare exceptions, hospitalized patients are diagnosed as paranoid conditions. Few psychiatrists ever have an opportunity to treat a pure case of paranoia because most paranoiacs possess sufficient insight, critical judgment, and self-control to avoid medicolegal difficulties.

With respect to hospitalized cases, the incidence rate is about the same for men and women. Overt manifestation of symptoms is most apt to be noted in middle life; the average age of patients at time of first hospital admission being close to fifty. In general, paranoia and paranoid individuals surpass other types of mental patients in intelligence and cultural status. Approximately 5 per cent of all patients admitted to state mental hospitals have attended college, but 10 per cent of paranoia and paranoid patients fall in this category (1).

Development and Interpretation.—Paranoia and paranoid conditions do not develop suddenly. The psychosis is a continuation and elaboration of the early prepsychotic personality. Long before the crystallization of the delusional systems, these individuals are peculiar, suspicious, irritable, conceited, and morbidly sensitive. They are noticeably lacking in sense of humor and take themselves very seriously. Their outlook is subjective and their interpretation of daily events is pessimistic. They distrust everyone, think that the world is against them, and have exaggerated ideas of their own importance. Even as children, they are jealous, moody, obstinate, resentful, arrogant, and easily offended.

Interested only in their own welfare, they are unable to submerge their individuality and become members of a group. They hold themselves aloof from intimate social ties, are unresponsive to the emotional reactions of associates, and are perplexed by the deeds and motives of others. Lacking altruism and amia-

bility, they are skeptical of human kindness and friendliness. There are never two sides to an argument. They are always right, and all who disagree are personal enemies. These annoying qualities do not make for harmonious social relationships. At an early age, they break with members of their family, many of whom present similar traits. Having few, if any, friends, they lead lonely, embittered lives. This social isolation accentuates their intrinsically suspicious natures, perpetuates their multiple hates, and nourishes their inflated egos.

For all their exalted ambitions, paranoiacs accomplish relatively little. The marked disparity between high aspirations and meager achievement constitutes a serious threat to their self-esteem. Too proud and self-centered to acknowledge their limitations and admit defeat, they are forced to create delusions that will satisfy their inner needs. The delusional material must serve two main purposes. To begin with, it must free the individual of any responsibility for his failure. This is done by projecting the blame upon the environment, especially the patient's persecutors. In addition, the delusions must strengthen the individual's belief in his own importance. Vast numbers of persecutors with unlimited resources satisfy this requirement in some cases. In others, the imperative need to be great drives the patient to imagine that he is actually an inventor, a prophet, a world leader, or the affianced of some wealthy person.

Since critical judgment is partially retained, the delusions must have some superficially factual basis. This is provided by falsification of early memories. Looking back over his life, the patient "remembers" little incidents that substantiate his delusions. The reality of the delusions is further confirmed by the convenient misinterpretation of incidental occurrences in the present. Hidden meaning is seen in the casual glance of a policeman, an overheard remark, or the content of a radio program.

Freud and his followers (4) have emphasized the homosexual component in paranoia. They maintain that the paranoid reaction is a defense against latent homosexuality. The underlying mechanisms are quite complicated. The paranoiac, finding himself attracted to a member of his own sex, is first faced with the thought, "I love him." Since this abnormal love attach-

ment is consciously inadmissible, the thought is changed to, "I do not love him, I hate him." This sentiment is then projected on the loved person to form the delusion, "He hates and persecutes me." There is some evidence in support of this theory. As a general rule, paranoid individuals are not interested in members of the opposite sex. In their delusions, they are often persecuted by some person of their own sex with whom they were formerly on friendly terms. In addition, it has been noted that on masculinity-femininity tests, male paranoids attain scores indicative of femininity (14).

A concise review of the main theories on paranoia has been reported by Cameron (5). He himself ascribes the sensitive, asocial personality of paranoiacs and their delusions to a defective development of role-taking, and to their relative inability to accept the attitudes of others and see things from more than one perspective.

Although interesting and informative, psychogenic and dynamic theories that attempt to explain the development and structure of paranoia leave unanswered several important questions. What determines the early personality peculiarities of the paranoiac, his suspicious nature, his inclination to social isolation, his tendency to misinterpret accidental experiences, his latent homosexuality, and his lack of social perspective? Why must he defend himself against self-reproaches by projecting his feelings and inclinations upon others in the form of persecutory delusions? Why does he seek to compensate for inadequacies through false ideas of grandeur? For the present at least, the answer is to be found in the constitutional inheritance and early life experiences of the individual.

CLINICAL MANIFESTATIONS

Delusions of Persecution.—While there are several symptoms of paranoia, delusions of persecution provide the central theme in the great majority of cases. The content of the delusions varies with the individual but the pattern is fairly consistent. For one or another reason, the patient is relentlessly persecuted by some relative, former friend, secret society, or political or-

ganization. His enemies spread malicious lies about him. They turn his friends and employers against him. They tamper with his mail, steal his ideas, or thwart his plans at every turn. Try as he will, he cannot evade them by changing his residence or place of employment. They follow him wherever he goes and continue their persecution.

Finding that he cannot run away or hide from his enemies, he may try to defend himself against them. He may ask his persecutors to leave him alone, or he may protest his innocence by writing letters to the newspapers. He may appeal to the police and high governmental authorities for protection, purchase weapons to defend himself, and barricade his home against intruders. Usually his actions remain defensive, but on occasion the patient may work himself up to a point where he feels his life is threatened. In desperation, he turns and attacks his persecutors or attempts to take his own life. As was neatly stated by a famous European psychiatrist, the actions of the paranoiac exhibit the following sequence: he flees, he defends himself, and finally he attacks.

Dominant and aggressive paranoiacs sometimes convince their sisters, brothers, husbands, or wives of the reality of their delusions and induce similar ideas in them. This *folie à deux* occurs especially when the relative is submissive and suggestible. The induced psychosis may be superficial. It sometimes clears up when the submissive personality is removed from the influence of the true paranoiac (8).

Delusions of Jealousy.—Married or engaged paranoiacs often accuse their spouses or sweethearts of infidelity. They hire detectives to obtain evidence, subject their victims to various tests, and try in every way to obtain confessions of guilt. The most innocent action is interpreted as irrefutable proof of unfaithfulness. If a husband smiles at a girl, he is having an affair with her. If a wife asks her paranoid husband what time he is coming home, she is obviously planning to see her lover while he is away. In cases of this type, it is usually found that the patient is impotent or sexually peculiar. By accusing the marital partner of infidelity, he indirectly frees himself from feelings of inadequacy and guilt.

Litigious Types.—Some paranoiacs are perpetually involved in lawsuits. Having little or no grounds for their legal actions, they invariably lose, but they persist in defending their "rights" and seeking justice until they have exhausted their finances and the patience of the courts. Even if a verdict is returned in their favor, they remain dissatisfied and find some pretext for reopening or appealing the case.

Grandiose Ideas.—After a period of persecution, the mental trend of paranoiac and paranoid patients may turn toward grandiosity, or exalted ideas may be present at the onset of the psychosis. The delusions compensate for failures and disappointments with respect to youthful ambitions. Four main types are usually noted. The first group, a substantial number, are inventors and scientists. Nothing ever comes of their inventions or discoveries because they are impractical, are too important to give to the world, or the plans are stolen by enemies. A second group are of the erotic type. Some prominent man or wealthy woman is in love with them. The love affair is completely platonic; it never culminates in marriage because of outside interference. A third group are of noble birth. Their true identity is temporarily concealed for important reasons, but eventually their wealth and high position will be restored to them. A fourth group regard themselves as superior human beings who are destined to perform some special mission in life. In this category are the prophets, leaders of radical religious sects, and political fanatics. Some are very persuasive and succeed in acquiring a large following.

ILLUSTRATIVE CASES

The following case, originally reported by Bluemel (2), demonstrates the persistent single-track mind of the paranoiac and his ability to reason logically and deceive others when necessary. Some possible *folie à deux* condition is also indicated.

Mr. White, a young lawyer, became associated with an older lawyer, Mr. Jenkins, as a result of their mutual interest in civic affairs. White made several social calls at Jenkins's home and fell in love with Jenkins's sister. However, his suit was rejected for the reason that

Miss Jenkins was already engaged. This situation created the suspicion in White's mind that Jenkins had prejudiced his sister against him. Accordingly, he continued to pay court to Miss Jenkins but his advances were repulsed.

Finally, Miss Jenkins left Denver and went to a Kansas hospital. White persisted in his attempts to see her. Miss Jenkins died and he insisted on seeing the body. The hospital authorities acquiesced and when White expressed doubt that Miss Jenkins was really dead, a nurse turned to the body and lifted an arm in order that he might see it fall limp and lifeless on the bed. After these experiences, White returned to Denver, where he shortly expressed the delusion that Jenkins had faked his sister's illness and death and that the alleged corpse was a dummy. He averred that he had heard the arm squeak when the nurse dropped it. He became more and more hostile toward Jenkins and finally threatened his life with a gun.

Jenkins preferred lunacy charges against him and White was tried before a jury. He conducted his own defense and in true paranoid style he repudiated his delusions. He admitted that he had said and done all that was charged against him, but explained that he had been overwrought and that in his calmer judgment he no longer entertained the delusional beliefs from which he had formerly suffered. In this manner he secured his acquittal, but before he left the court he called one of the psychiatrists aside and insisted that he had in reality seen a dummy corpse at the hospital and that he had indeed heard the arm squeak. Again he began persecuting Jenkins, and again much of the procedure repeated itself. There was a second lunacy trial, a second able defense by the patient himself, and a second acquittal.

White now went to California. He failed miserably when he attempted to establish himself in the practice of law, and he came to the conclusion that he was unable to succeed because of the presence of Jenkins's emissaries. While in California, he married a woman who apparently was also a paranoiac. Shortly, the couple returned to Denver, where they filed a number of lawsuits. White sued practically everyone who had exposed him in his previous trials, and he sued the newspapers that had published accounts of the trials. He made claims for damages in excess of a million dollars. His wife brought 85 lawsuits on her own account.

Meanwhile White continued to harass Jenkins. He rented a room which overlooked Jenkins's yard across an alley, and he would sit at the window with a rifle in his hands. One day he called at Jenkins's house, apparently in a peaceable mood, and demanded an apology.

Members of the household staff called the police, who found that Mrs. White was carrying a revolver in her muff. As a result of these episodes, White appeared a third time before a jury to defend his sanity. At this hearing, his arguments were unsuccessful, and he was adjudged a lunatic.

The following letter was received by a colleague a few days after the newspapers carried an account of his research studies in audition. In the absence of careful clinical examination, the diagnosis is tentative, but the hallucinations and delusional ideas expressed are typical of a paranoid condition.

Dear Sir:

I have just read your very interesting article in the newspaper, of a cure for ear trouble. This trouble I have gone thru and I am still going thru, started in 1932, as I sat near the Radio. My ear started to act funny, that is it closed and opened and kept doing this everytime I got near the speaker. And after a while I began to hear a woman's voice after the Radio was shut off at night. At first I thought it came from down stairs, but I soon found out it was coming from the heat register which was a hot air heater and came from the cellar. I did not know at that time I was contacted to a high Frequency Band which I believe is about 1-6 of a meter, and these people can get the echo of these impulses as now I can hear them at all times, at work, up town, in my car or at all times. I know you are not going to believe this, but it is the truth. They hear everything I say, and get my thought impulses, and know everything I am thinking of. When I put my finger to the front of my left ear and close it up I can hear a buzzing that sounds just like an electric Generator running. And if I get in a powerful light it has a vibrating effect all down my left side as I understand the eyes are radio receivers to a very narrow frequency. These people raise hell with me all day when I am at work. They contact the Vacuum blower pipes and noises of the Machinery with my ear and try to make me excited, so as to make a more complete circuit.

About a year ago they made me have a nervous breakdown. I could not sleep nights, and I would turn back and forth in bed and my head would turn to my left side or heart side. I found later that they were contacting the bed springs. As the springs are tempered steel, they are magnetic. In this way they contacted my body with the springs and I was being charged with these impulses just the same as a battery. I felt this going through my body mostly on the left side as that is the

ear which is contacted. I did not know at that time what the trouble was until I got some Radio News Books, these are not fiction as I do not read it. Understand this started in 1932 and I was going through all of this hell up until last year when I learned what was going on. This is still going on but I work every day. I do not say anything to people about it as they would not believe me, and I could not blame them, as it sounds crazy. Now I do not drink, smoke, or use coffee or tea. I weigh 210 pounds and I feel fine. I can sleep now as I put insulation under the mattress and on the springs. I know as God is my judge this is the truth as these people can cause my radio to stop and put noises in the speaker and my wife and boy can verify to this. This summer when I got in the sun and done any work, they could raise the temperature of my blood stream and I would get weak and sweat and tremble. I have been taking nerve tonic, and it has helped me some.

But I still hear these people, and they say that they have got to get rid of me, as I know too much of what they are doing. I know they have used me as an experimental man or to develop the machine as I was always a very highly nervous person. That is how I made such a good contact. Also I was hit on my left ear when I was a boy with a baseball and maybe my ear drum is weak. I also think this machine is a lie detector as they can keep my mind on one thing for some time, and when I was sick I could hear my heart beats. I could tell much more, but you will not believe it and I cannot expect you to. So I wish you will answer my letter and I want you to use me as an experiment to determine if my brain is giving out electrical impulses and also receiving them. I have all the confidence in the world you can detect this high frequency wave and you can believe me this is something which has not been done before, and is very hard to believe. Please answer as soon as possible as no one that I have written to can understand it.

Good by

The difficulty of living with a person who has a paranoid condition is apparent from the following case.

When Mr. and Mrs. A took their vacation, they invited Miss C, a close friend of Mrs. A's, to live in their home. Upon returning from her vacation, Mrs. A complained that there was a peculiar odor in her home and soon developed the delusion that Miss C had used the home for immoral purposes. A few weeks later she brought charges against Miss C on the ground that Miss C was spreading a pack of

lies about her and trying to turn her husband against her, so that she, Miss C, could marry him. She also claimed that the neighbors spied on her and trained their dogs to bark at her.

Following repeated neighborhood disturbances, Mrs. A was sent to a mental hospital. During the first interview, she was calm, cooperative, and communicative. She wanted the physician to make a thorough mental examination and then sign a statement that she was sane. With continued hospitalization, she became assaultive, profane, and irascible. Whenever her husband visited her, she would shower him with vituperations and accuse him of every form of immorality. The physicians were all called "quacks" and the nurses were "stool pigeons." At all times, however, she was well oriented and mentally alert.

The psychology of the paranoid is well summarized in the following poem, reprinted from *A Psychiatrist's Anthology* (9).

PARANOIA

A web of intrigue round me forms;
I feel it in the air.
A hundred faces scowl and smirk,
Their plotting hands are everywhere.

They poison me, they torture me,
In subtle ways they work—
The Church, the state, the secret lodge.
Behind me women talk and lurk.

A mental Quixote I'm called,
'Tis wrong, they are real to me.
This cosmic hate but means I'm Christ;
I'll die on bare Golgotha's tree.

Treatment and Prognosis.—Paranoia and paranoid conditions are relatively incurable and nonprogressive diseases. Once they are fully developed, the delusions of persecution and grandeur remain fixed. It is futile to try to alter them. The most that can be accomplished is to make the patients understand that their actions and ideas, if uncurbed, will lead to imprisonment or prolonged hospitalization. Hospitalization in these cases is more a punitive than a therapeutic procedure. They regard themselves as superior to their psychiatrists and refuse to co-

operate with the hospital staff, who they imagine are in league with their enemies. If hospitalized, they usually make a pretext of renouncing their delusions and are soon released. Hospitalization, however, does exert a restraining influence. After a period of incarceration, the majority are more reserved and less apt to be a source of danger to others.

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CHAPTER XIV

ALCOHOLIC MENTAL DISORDERS

Alcoholic indulgence, even in excessive amounts over a period of many years, is rarely the direct or sole cause of mental disease. In the great majority of cases, alcoholism is itself only a secondary symptom of some other underlying personality disturbance. For this reason, intemperate drinkers who become psychotic are often assigned to other diagnostic categories, especially general paresis, psychosis with cerebral arteriosclerosis, epilepsy, schizophrenia, and manic-depressive psychosis. However, current psychiatric practice still recognizes certain well-defined symptom pictures as fundamentally alcoholic in nature. These are classified as *alcoholic psychoses* and include pathological intoxication, delirium tremens, Korsakoff's psychosis, acute hallucinosis, and alcoholic deterioration.

Incidence.—In recent years, approximately 4 per cent of first admissions to mental hospitals have been diagnosed as alcoholic psychosis, and an additional 5 per cent have been classified as alcoholic without psychosis (12). Approximately one out of every 200 individuals in the general population may be expected to develop an alcoholic psychosis at some time during his life. Alcoholic psychoses are primarily disorders of middle life. Slightly more than 70 per cent of alcoholic patients are between thirty and fifty-five years of age at time of first admission to a mental hospital. Their average age is about forty-five. As indicated by hospital admissions, the incidence rate for the urban population is more than three times as great as that for the rural population, and the incidence rate for Negroes is about three times as high as that for the white population. An unusually high proportion of alcoholic patients are divorced or widowed. Among male alcoholics, the proportion of bachelors is almost twice as great as that present in a comparable sample of the general popula-

tion, but among female alcoholics the percentage of single women is about the same as that for the general population (7).

WHY PEOPLE DRINK

Normal Drinking.—A distinction must be made between the alcoholic and the person who occasionally takes a drink. The American who has a cocktail before dinner, like the European who has a glass of beer or wine with his meal, is not an alcoholic but a normal drinker. The normal drinker does not have an irresistible craving for alcohol, and he is moderate in his consumption. His motives for drinking are simple. He drinks because alcohol tends to induce a pleasant feeling tone, characterized by physical relaxation and mild mental and emotional stimulation, that makes for greater conviviality and good fellowship. The alcoholic, on the other hand, has periodic strong cravings for alcohol and is usually intemperate in his consumption. His reasons for drinking are deep-seated and complex.

Heredity.—From 35 to 40 per cent of inebriates have relatives who have exhibited alcoholic or other abnormal tendencies (5). This finding has led several European investigators to emphasize the constitutional basis of alcoholism, in the sense that intrinsic psychobiological defects may provide a favorable foundation for alcohol addiction. Although it is quite likely that alcoholism is frequently symptomatic of some hereditary liability, the interrelationship must be carefully interpreted. The urge to drink is never inherited, and no person is destined to become an alcoholic because of his heredity. At most, hereditary defects increase the probability that a person will turn to alcohol as a solution to his problems.

Psychological Theories.—Psychological theories emphasize the purposes served by alcohol. It is a solvent for responsibilities and heartaches. Sorrows and cares are drowned and replaced by gaiety and good cheer. It is a vehicle of escape from domestic conflicts, business worries, and feelings of inferiority. It is the eraser of painful memories and the remover of social inhibitions. It gives courage to the coward, confidence to the timid, pleasure to the unhappy, and success to the failure. In

brief, alcohol permits a flight from the disappointments and frustrations of reality. There is nothing wrong with these popular explanations—but they tell only part of the story. Of the many individuals who have problems and worries, only a small percentage seek escape in the bottle.

Psychoanalytical Theories.—Many psychoanalysts explain alcoholic addiction in men in terms of repressed homosexuality. One argument advanced in favor of this hypothesis is that excessive drinking by men occurs principally in the company of other men, under conditions that favor intimate contacts. Alcohol, as an inhibition remover, permits the repressed homosexual urges to come freely to the surface. A further link in the chain of psychoanalytic arguments is that the voices that torment the hallucinating alcoholic patient sometimes accuse him of homosexual practices. This clinical observation is in keeping with the repressed homosexuality hypothesis, because hallucinations are indirect manifestations of personal thoughts, wishes, and temptations.

A second well-known psychoanalytical theory, best expounded by K. A. Menninger, is that alcohol addiction is a form of partial suicide. He writes (9, p. 160): "Alcohol addiction, then, can be considered a form of self-destruction used to avert a greater self-destruction, deriving from elements of aggression, excited by thwarting, ungratified eroticism, and feelings of a need for punishment related to aggressiveness. Its further quality is that in a practical sense the self-destruction is accomplished *in spite of*, and at the same time *by means of*, the very device used by the sufferer to relieve his pain and avert this feared destruction."

These theories are important contributions to the understanding of alcoholism and have won some acceptance outside of analytic circles. Like other psychoanalytic theories, their weakness lies in oversimplification and disregard for individual differences. Repressed homosexuality and the self-destruction motive may each play a dominant role in certain cases of alcoholic addiction, but neither of these is all-important in any one case or present in every patient. Many men are solitary drinkers, and a large number of the hallucinations of alcoholic patients are

devoid of homosexual content. The theory of repressed homosexuality finds little support with respect to female alcoholics, who as a rule prefer male to female drinking companions. Even if we assume that alcoholic addiction is a form of partial suicide, there remains the question why certain individuals select this means in preference to other more direct methods.

Cortical Inhibition Theory.—Any interpretation of alcohol addiction must account for the popularity of alcohol among all races from the earliest time. With great ingenuity, primitive and civilized man, from the beginning of recorded history, concocted alcoholic beverages and obtained pleasure in their consumption. The rich and the poor, the successful and the unsuccessful, the bright and the stupid have all been attracted to alcohol. Despite the many campaigns waged against it and its known harmful effects, alcohol still retains an important role in the lives of many people. Since the majority of drinkers dislike the taste of alcohol and go to considerable trouble to disguise it, its appeal obviously lies in its effects rather than in its taste. What then are its effects?

On the basis of present knowledge, the most comprehensive answer that can be given to this question is that alcohol exerts a paralyzing influence on the cerebral cortex. Since the cortex is both the seat of memory and other higher mental functions and the inhibitor of emotional impulses, its paralysis frees the drinker from disturbing memories and thoughts, abolishes reason, removes caution, and gives free rein to man's more primitive affective self. Unrestrained by critical judgment and social inhibitions, and oblivious of responsibilities, defeats, and hardships, the alcoholic becomes a free emotional being. With the aid of alcohol, man throws off the yoke of intelligence, discards his social mask, and freely expresses his true feelings, emotions, and inner personality. Alcohol is a means of escaping one's mental and social self. Through alcohol, both the sane and the psychotic drinker strive to remove perplexing thoughts and painful memories, lift the lid off emotions, and escape the world of reality.

This theory is more fundamental and inclusive than the psychological and psychoanalytic theories. It fails, however, to

explain why some drinkers become addicts and others do not. Some basic constitutional difference in susceptibility or tolerance threshold may be the answer; but more research is needed on this point.

Personality Factors.—There is no specific “alcoholic personality.” Alcoholics do not constitute a homogeneous group. In an unselected group of inebriates, there will be found as many different personality types as there are in the general population. Within the alcoholic group, there is some evidence that individuals whose addiction is incidental to social drinking over a period of years, show more extroverted, or cyclothymic, tendencies than do individuals whose addiction is symptomatic of a basic personality imbalance.

In their family relationships, male alcoholics usually express a greater preference for their mothers than their fathers. The latter are frequently described as stern and autocratic. However, child-parent attitudes of this nature are so prevalent in normal and other deviant groups that little etiological significance may be attached to these findings (5).

Social Factors.—The extent of alcohol addiction is in part determined by the availability of intoxicating beverages. In grape-growing countries and in countries where alcohol is freely and cheaply sold, the incidence of alcoholism is higher than in other countries. The interrelationship between the availability of alcohol and the extent of alcoholism was illustrated by the American prohibition experiment. In the early years of prohibition, when alcohol was scarce, the incidence of alcoholism, as measured by deaths due to alcohol and number of alcoholic patients admitted to mental hospitals, was markedly lower than during the preprohibition period. In the later years of prohibition, when bootleg alcohol was plentiful, the incidence of alcoholism returned to the preprohibition level (11), and it has remained at about this level since the repeal of prohibition.

Sex differences in alcoholism also stress the importance of social factors. Women are as susceptible to alcoholic addiction as men, but more women than men are discouraged from drinking by training and social pressure. Therefore, among first admissions to mental hospitals, male alcoholic patients exceed fe-

male admissions in the ratio of approximately 5 to 1. This sex differential varies in different sections of the country (12).

The significance of social factors is further borne out by a comparison of the prevalence of alcoholic mental disorders among various foreign-born groups in New York State. As a group, the foreign-born have about the same incidence rate as the native-born; but the incidence of alcoholic psychoses among the Irish foreign-born is about five times as great as that for the native-born population (8).

GENERAL EFFECTS OF ALCOHOL

Simple Intoxication.—Alcohol is a toxic drug. When too much is consumed in a short time, the resulting poisoning of the brain gives rise to a variety of temporary symptoms. The severity of the mental disturbances is roughly proportional to the alcoholic concentration in the body. This may be determined by a chemical analysis of the blood and urine. Depending on the degree of intoxication, the amount of alcohol in the blood usually varies from 0.01 to 0.50 per cent. The concentration of alcohol in the urine for comparable stages tends to run slightly higher.

Although alcohol affects people in different ways, certain generalizations are possible (10). These are sketched in Fig. 11. Mild states of intoxication are usually accompanied by subjective feelings of well-being, bordering on euphoria. Emotional responses are exaggerated. The subject is good-natured and overtalkative. The physical state is one of warmth and relaxation. As the concentration of alcohol in the body increases, there is a mental clouding. Thought processes become superficial and judgment is impaired. The subject is unnecessarily loud, and the ideas expressed are uncensored, disconnected, and often inappropriate. The subject has a feeling of increased power and ability, but objective tests show that his mental and physical efficiency is noticeably reduced.

From a state of pleasantness, the prevailing mood gradually changes to one of irritability, arrogance, and boastfulness. Normal inhibitions are cut off and the drinker becomes a social nui-

sance. When the amount of alcohol in the blood approaches 0.1 per cent, the subject begins to lose control of his activities. He experiences feelings of remoteness and sensory stimuli seem odd. Perceptions are hazy. He staggers when he walks, and talks to himself. Speech is slurred and simple movements are

THE CHEMICAL DETERMINATION OF ACUTE ALCOHOLIC INTOXICATION

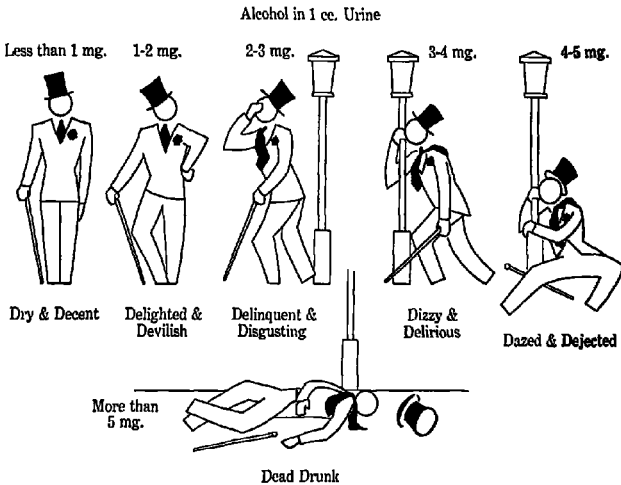


FIG. 11.—The effect of varying degrees of intoxication on behavior. (From Bogen, E., *The human toxicology of alcohol*. In H. Emerson, ed., *Alcohol and man*. New York: Macmillan, 1932, p. 136.)

clumsily executed. The subject has difficulty in unlocking and starting his car, sings loudly, and swears at other drivers, who appear to be driving on his side of the road.

When the amount of alcohol in the blood reaches 0.2 per cent, the subject is no longer capable of self-management. He needs help in walking, weeps and fights, is drowsy and nauseated. A stuporous sleep gradually overtakes him. This is largely a protective device, since it prevents the drinker from consuming a fatal dose of alcohol. Upon awakening, the subject usually has a disagreeable taste in his mouth and a throbbing headache.

Alcohol Addiction.—Strictly speaking, alcohol is not a habit-forming drug in the same sense as morphine and other allied drugs. Morphine addicts gradually build up a tolerance for the drug so that an ever-increasing amount is required to produce the effects previously produced by smaller amounts. The alcoholic develops some tolerance, but it soon becomes fixed at a certain level. A second distinction is that continued use of morphine conditions the body tissues so as to create a physiological craving for the drug. When morphine is discontinued, there are definite withdrawal symptoms of a physical nature, including restlessness, goose flesh, chills, cramps, muscular twitchings, and vomiting. This tissue conditioning does not occur with alcohol. The confirmed inebriate when deprived of alcohol will, of course, have a desire for it, but this craving is by no means as insistent or intense as that experienced by the morphine addict. Moreover, it is usually more psychological than physiological.

TYPES OF ALCOHOLIC PSYCHOSES

Pathological Intoxication.—Approximately 10 per cent of alcoholic patients admitted to mental hospitals are of this type. Varying in duration from a few minutes to a few hours, pathological intoxication is marked by blind rage and profound mental confusion. Criminal behavior and suicidal attempts during the attack are not uncommon. Motor coordination is fairly well retained and speech is unaffected. Upon recovery, the patient is usually unable to recall events that occurred during the attack.

Pathological intoxication may occur after ingestion of only a small quantity of alcohol. Instances have been noted where as little as two glasses of beer precipitated the condition. In most cases, however, a larger quantity of alcohol is necessary. In view of the discrepancy between the severity of the reaction and the amount of alcohol consumed, it is generally held that pathological intoxication occurs primarily in individuals having psychopathic backgrounds—especially epilepsy, schizophrenia, or hysteria—and in persons with brain injuries. There is also some

evidence that this reaction is likely to occur when the drinker has a deficiency of blood sugar (4).

Delirium Tremens.—This reaction, which accounts for approximately 5 to 10 per cent of all alcoholic mental disorders, is brought about by heavy drinking over a period of many years. Somewhat paradoxically, the onset of an attack is at times preceded by a period of abstinence. Formerly, it was thought that the sudden withdrawal of alcohol was responsible for the disease. It is now generally accepted that cessation of drinking is but an early symptom of an attack. For a day or more before the onset of acute symptoms, the patient is too sick to drink.

Persons developing delirium tremens have predominantly normal personalities, and the incidence of psychiatric abnormalities among their close relatives is as low as in the general population. The appearance of mental symptoms in these individuals cannot be attributed to psychopathic heredity. Recent views on the subject indicate that this reaction is most likely to occur in inebriates of long standing who also suffer from various metabolic disturbances, vitamin-B deficiency, or acute infections. Some brain pathology has been noted at autopsy, but the neurological findings do not differentiate delirium tremens from other forms of alcoholic psychoses.

The symptoms experienced by delirium tremens patients are fairly consistent. Early signs of an impending attack include anxiety, fear, insomnia, headache, hypersensitivity of the sense organs, nightmares, vertigo, and convulsions. The actual onset of the disease is sudden and generally occurs at night. Patients become shaky, apprehensive, and confused. Consciousness of personal identity is well retained, but spatial and temporal disorientation is common. Members of the hospital staff are recognized as old friends, and the hospital is mistaken for a tavern or a private home. Suggestibility is marked. Delirium tremens cases readily see nonexistent objects pointed out by the examiner and can be made to read empty sheets of paper.

The outstanding symptoms are visual hallucinations. Fast-moving rats, snakes, dogs, cats, spiders, pink elephants, and other fantastic animals and insects attack the patient on all sides in great number. Auditory hallucinations in the form of threaten-

ing voices are common. The reactions of patients to these hallucinatory experiences vary. Some become excited, cry for help, and vigorously fight off or try to escape from the animals and their attackers. This intense fear reaction is commonly known as "the horrors." Others have fair insight into the hallucinatory characteristic of their visions and are amused by the sights.

Prevalent physical symptoms are pronounced tremors of the hands, marked motor incoordination, restlessness, insomnia, fever, nausea, profuse perspiration, increased blood pressure, and rapid pulse. Severe physical exhaustion is sometimes noted.

Treatment consists of rest in bed and the maintenance of proper nutrition. To quiet excited patients, recourse is often had to warm baths and sedative medication. A high caloric diet, consisting mainly of fluids, is recommended. This should be supplemented by B-complex vitamins and high intake of table salt. Prognosis is essentially favorable. Death, due primarily to complicating heart conditions and pneumonia, occurs in about 10 per cent of cases; the remainder show good recovery. The usual duration of the delirium is three to six days, but it may last somewhat longer. Following a deep and prolonged sleep, the patient awakens completely well.

Korsakoff's Psychosis.—Approximately 10 per cent of male alcoholic patients admitted to mental hospitals each year are classified as having *Korsakoff's psychosis*. The percentage is somewhat higher among female alcoholic patients. Nervous and mental diseases are not unduly prevalent in the families of patient's with Korsakoff's psychosis, and the victims themselves in their prepsychotic period do not exhibit marked mental abnormalities. The disease is apparently the result of alcoholic abuse over an average period of about 25 years (13). Nutritional and digestive disturbances, which in turn are produced by prolonged alcoholism, also appear to have causal significance. There is considerable evidence that vitamin B₁ deficiency is an important contributory factor (6).

Early symptoms may resemble those occurring in delirium tremens or the onset may be insidious. The essential feature which differentiates this disease from other alcoholic mental dis-

orders is the inability of the patient to form new associations. Experiences and events occurring after onset of the disease leave no memory impressions. They vanish as they occur.

A patient may have the same doctor for several years, but each visit is for him the first meeting. By the time a patient finishes reading a newspaper, he has forgotten what he has read and may reread it a dozen times without realizing that he has read it before. A few minutes after eating a large meal, he may be unable to remember whether he has eaten and he may complain of a loss of appetite. Contrasted with this striking loss of memory for recent events, memory for events preceding the onset of the disease is fairly intact. In ordinary conversation, the patient gives the impression of being in command of his mental faculties. His general behavior is calm and rational. Questions not pertaining to events that have occurred since the onset of the illness are answered promptly and intelligently. The mood is often one of mild euphoria.

Some patients are aware of their memory impairment and complain about it, but others have no insight into their defect. The latter, when asked a question about some recent event, promptly fill in their amnesic gap with some fabricated material. This is not done with a conscious intent to deceive or conceal. The fabrication or pseudo reminiscence is spontaneous. There are no moments of confusion or indecision. Having no memory for what has actually happened, the patient believes that what he makes up is true, but since he cannot remember what he has said from one moment to another, his story is often inconsistent.

When asked what he had done the night before, an alcoholic who had been in a mental hospital for ten years replied with perfect sincerity, "Well, I went downtown last night and had dinner. Then I went to a movie and after that I went out with some of the boys to Joe's. We had a couple of drinks and then I came home." The examiner then asked if the patient had gone to work that morning. The patient answered that he had gone down to the docks and loaded some cattle on boats. He proceeded to give a coherent description of how this was done. At this point the examiner interrupted the patient and

asked him how he had enjoyed the dance he went to last night. The patient said, "Fine. It was a nice affair."

The great majority of patients with Korsakoff's psychosis show degenerative changes in the peripheral nerves which result in weakness of the legs and arms, pain in the limbs, tenderness over the nerve trunks, wrist-drop, foot-drop, and loss of deep reflexes. This neurological impairment is thought to be due to vitamin B deficiency. When treated with vitamin B₁, patients with Korsakoff's psychosis show favorable physical improvement, but the mental symptoms are usually unaffected. The mortality rate is high and complete cures are rare. Treatment procedures stress immediate discontinuance of the use of alcohol, rest in bed, and a nourishing diet, rich in vitamins.

Acute Alcoholic Hallucinosis.—This subtype accounts for 20 to 25 per cent of alcoholic patients admitted to mental hospitals. Acute hallucinosis occurs primarily in individuals exhibiting marked schizoid traits. In many cases, alcohol very likely operates as an indirect cause releasing latent schizophrenic tendencies. However, the importance of alcohol is not to be slighted. Psychotic reactions do not appear after a single bout of drinking. At the time of first admission to a mental hospital, the majority of patients with this disease have a history of alcohol addiction extending back for at least 15 years.

As in the case of delirium tremens, symptoms in acute alcoholic hallucinosis include anxiety, hallucinations, sensory hypersensitivity, and insomnia. An important contrast is that the hallucinations are predominately auditory, and those in delirium tremens are visual. The hallucinations of the acute hallucinosis state are noteworthy in that the patient usually hears other people conversing about him in the third person. The voices threaten the patient, call him names, and accuse him of immoral practices. Acute hallucinosis patients take their hallucinations seriously. Terrified and panic-stricken by the threats of their imaginary persecutors, they may appeal to the police for protection, arm themselves in self-defense, or seek escape through suicide.

Whereas delirium tremens patients are confused, disoriented, and inaccessible, acute hallucinosis cases are usually well oriented

and are clearly conscious. Illusions, suggestibility, and restlessness are less pronounced in acute hallucinosis, and the attack lasts considerably longer. After recovery, there is fair recall for events that occurred during the acute stage. A further distinction is that delirium tremens patients are mainly extroverts, and patients with acute hallucinosis are essentially introverts.

Since these patients are frequently a source of danger to themselves or others, hospitalization or strict supervision is imperative. Apart from total abstinence and necessary medical care, little is known about treatment. Spontaneous recovery usually occurs within a few days or a few weeks, but if the patient resumes drinking, as commonly happens, a recurrence of symptoms is likely. In some instances, recovery does not occur and the condition assumes a more pronounced schizophrenic character.

Alcoholic Deterioration.—Excessive use of alcohol over a period of many years frequently produces a general disintegration of the personality. Approximately one-fourth of alcoholic patients are admitted to mental hospitals for this reason. Symptoms are not uniform in all cases but may include irritability, impulsive brutality, memory impairment, exaggerated suspiciousness, loss of ambition and will power, neglect and abuse of family, indifference to personal appearance, and disregard for social responsibilities. Some common physical characteristics are reddening of the face and nose, bloated appearance, flabby muscles, tremors, impaired physical stamina, cirrhosis of the liver, and decreased resistance to disease (4).

Other Alcoholic Psychoses.—Various psychopathic reactions with alcoholic coloring are sometimes classified with alcoholic mental disorders. The clinical picture is usually one of paranoia, depression, or mental confusion.

TREATMENT AND PROGNOSIS

There is no simple or universally accepted cure for alcoholism. Where drinking is an incidental symptom associated with feeble-mindedness or some fundamental psychopathic disturbance of the personality, treatment is primarily concerned with the basic underlying condition rather than with alcoholism. The pro-

cedures described below are essentially limited to those cases where addiction is identified with social drinking over a period of years. More detailed descriptions may be found in the excellent review of Bowman and Jellinek (5). No method is guaranteed, since prognosis in alcoholism is discouraging.

As in other forms of personality disorders, outcome is to a considerable degree determined by the willingness of the patient to be cured and by the skill of the therapist. In general, favorable results, in terms of several years of abstinence, may be expected in only one-fourth to one-half of treated cases. Best results are obtained with intelligent, emotionally mature individuals who have favorable and sympathetic home backgrounds. Age is an influencing factor. Individuals who were heavy drinkers at the age of twenty, and inebriates over fifty, are poor risks (5, 15).

Place of Treatment.—No general statement can be made as to whether it is most desirable to treat the alcoholic at home, in a closed or open institution, or on a health farm. Each presents advantages and disadvantages. Final decision must rest with the personality and circumstances of the patient and the judgment of the therapist.

Withdrawal.—There exists some disagreement of opinion among authorities as to the best procedure for achieving total abstinence, which is obviously the first step in any form of treatment. A few therapists prefer a gradual tapering off, but the majority favor immediate and complete withdrawal of alcohol on the grounds that it proves to the patient that there is no medical necessity for the use of alcohol. Both groups, however, are agreed on the fundamental point that the final goal of therapy must be absolute and total abstinence. Experience has repeatedly demonstrated that the true alcoholic cannot become a temperate or normal drinker. He must give up alcohol completely if he is to be cured. The first drink is his undoing. There is only one sensible answer to the question whether alcohol should be kept out of sight of the patient. If the patient leads a normal social life, as he should, he will inevitably be exposed to the sight of alcohol in liquor stores, restaurants, and at cocktail parties. He must learn to avoid alcohol even when it is available.

Punishment.—The most widely used and most ineffective method is punishment. In nearly all communities, troublesome inebriates are fined or sent to jails and workhouses. Soon after their release, they resume drinking. Parents and wives frequently threaten their alcoholic sons and husbands with disinheritance, divorce, and other dire consequences if they ever touch a drop again. Similarly, employers usually threaten intoxicated employees with immediate discharge, and the community ostracizes its drinking members. Punitive measures of this type occasionally have a temporary restraining influence but rarely result in permanent cures.

Drugs.—The use of drugs to destroy a craving for alcohol is an ancient practice, still popular in modified form. Several techniques have been suggested. The least desirable are patent medicines and pills that are guaranteed to cure the alcoholic habit. These nostrums are either innocuous drugs, dependent upon suggestion for their effect, or they are beverages of high alcoholic content that permit the repentant inebriate to take his alcohol in pseudomedicinal form.

A second approach, which has reputable support, is based on the principle of conditioning the patient against alcohol by associating drinking with painful or disagreeable experiences. This is done by putting nauseating drugs in drinks or, under carefully controlled experimental conditions, injecting the patient with some drug that will induce vomiting whenever he takes a drink of alcohol. Favorable results with the latter technique have been reported by Voegtlin (14). In a large group of patients followed for four years, abstinence was noted in 45 per cent of cases. One limitation of the method is that many patients realize that the drug, not the alcohol, is responsible for the nausea.

A somewhat different approach is the use of stimulating drugs, such as benzedrine, to produce the general state of well-being which would make the use of alcohol unnecessary. Encouraging results have been obtained in some cases, and it is probable that this use of drugs may form a valuable supplement to other forms of therapy (3).

Psychotherapy.—Bowman and Jellinek (5) classify psychotherapeutic measures in three groups. The first includes various surface forms of treatment, for example suggestion, moral encouragement, persuasion, and hypnosis. Not infrequently these techniques produce dramatic cures. A patient given a post-hypnotic suggestion to the effect that he will dislike and avoid all alcoholic beverages will often refrain from drinking. Unfortunately, such cures are usually temporary. The basic personality disturbances that are directly or indirectly responsible for alcohol addiction remain untouched.

Emotional treatments that are largely substitutive in nature constitute the second group. Religious conversion and intense emotional experiences that profoundly alter the patient's personality and reorient his outlook on life belong in this category. For short periods at least, emotional outlets of this nature apparently serve as satisfactory substitutes for alcohol in many cases.

In recent years, a new movement called Alcoholics Anonymous has attained considerable popularity and success (1). This movement has a strong spiritual foundation, but its approach is radically different from that of temperance societies. There is no preaching or "holier than thou" attitude. Its members are former alcoholics who understand the problems of the inebriate. Because of their own alcoholic past, they can approach the drinker on an equal footing and win his confidence. To brothers in distress Alcoholics Anonymous offers fellowship, sympathetic aid, and a message of hope based on belief in a superior Power with whose aid alcoholism and other shortcomings may be conquered. Retribution and honesty toward oneself are other important tenets of the movement. It is still too early to decide whether this novel treatment of alcoholics by alcoholics is a passing fad or will be an important milestone in the therapy of alcohol addiction.

The third group of psychotherapeutic measures places primary emphasis upon uncovering the basic causes for drinking. It is assumed that alcohol in various ways serves as an artificial means of adjustment to pressing emotional and personal problems. The

aims of therapy are to expose the true nature of these conflicts; to eradicate the sources, if possible; and to strengthen the personality so that the patient will be capable of coping with his difficulties more effectively and rationally.

To achieve these ends, the patient must be guided to an objective understanding of his problems and encouraged to undertake necessary corrective steps so that there will no longer be any need for alcoholic indulgence. This is usually a long and arduous task. It involves the complete cooperation of the patient and of his family as well. For favorable results, the patient must have complete confidence in the therapist and must be willing to shoulder his own responsibilities. The exact procedure whereby the alcoholic is led to an understanding of his difficulties and guided to a better adjustment is an individual matter. Some therapists prefer a conversational interview; others use psychoanalysis or a combination of several techniques, in an endeavor to reeducate the patient to a life of complete abstinence, emotional maturity, and social usefulness.

AUTOBIOGRAPHY OF AN ALCOHOLIC

I took my first drink during my freshman year at college, the night I was initiated into my college fraternity. One of the boys sold me on the idea that it was the thing to do in order to become a good sport. That first drink was not memorable. After all, one does not become a drunkard overnight. I was a social drinker all during my college days. I have had many good times and suffered to some extent the morning after. At the time, it never occurred to me to drink in the morning. I could not bear the sight of the stuff. I do not think it affected my scholarship much. In any event, I graduated, not brilliantly, but I did get my degree.

After college, I began to drink more frequently and also to consume a greater quantity at one time. It was about two years after my school days that I took my first drink in the morning. I can now see that this morning was the beginning of the end. By now I was married and the father of a young son, but this added responsibility did not seem to make any difference. Drinking was no longer a minor sport but a major one. I now drank every morning if I had had anything the night before—and this was the case more often than not.

Mysteriously enough, I managed to hold my first position for 11 years, but finally my employer rightfully reached the end of his endurance, and at almost the same time so did my wife. Why go into all the details? Happy moments, yes, but terrible hours, too. Unbearable embarrassments, loss of friends, even casual jail. By this time I was, of course, attempting by might and main to pull myself away from the clutches of my vice. I spent hundreds of dollars on psychiatrists, and upon losing my employment, I went away to a private mental institution for a month. This was an impressive experience, but it did me no good. My whole attitude was that this was an opportunity to build up physically, and at the end of the time I would be able to start all over again—and this time drink like a gentleman. I would never under any circumstances get drunk again.

From there I went to New York City and immediately obtained a new position. By now, my drinking habits had somewhat changed. From complete abstinence, I would start taking a few drinks each day, gradually increasing the number. This would go on for four or five weeks, during which time I would carry on with indifferent success in my occupation. Then the morning would come when I would be too ill to go to work. For three or four days I would put myself under the complete domination of alcohol, using it as an anesthetic, sometimes going to a hotel, and scarcely leaving my room except to get another supply of the stuff. Eventually the time would arrive when I would be so weak and jittery that I knew I would either have to quit or die—and I would quit. Although I knew that I should eat at least meagerly during one of these sieges, the thought of food was so abhorrent to me that I ate practically nothing. As I was living alone in a strange city, the final wind-up generally necessitated going to a hospital for a few days. Then I would go back sober and repentant—and determined. I would be all right for a month or more and then go through the same process again.

Finally, after losing my job again, I decided that first and foremost I must go somewhere where I would be unable to obtain alcohol for a long period of time. So I came to what is the finest private mental institution in the country. Here I can build up my health and obtain a new perspective.

My conclusions? First, we problem drinkers must realize that we can never become temperate drinkers. The "reformed drunkard" who becomes a moderate drinker never was a drunkard in the true sense of the word—the real reformed alcoholic becomes a teetotaler. Secondly, and most important of all, we must decide that we do not want

to become temperate drinkers. So long as the alcoholic persists in his admiration of the moderate drinker, so long as his desire is to emulate him, he will sooner or later experiment, and disaster will result.

Several months have elapsed since I made my decision to seek asylum, and I am about ready to try my wings. I am going to turn my weakness into an asset. I don't dare to be a temperate drinker. But best of all, I don't want to be. If this is whistling in the dark, I choose to whistle. [Adapted from an anonymous article (2).]

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CHAPTER XV

TOXIC AND ORGANIC PSYCHOSES

GENERAL PARESIS

General paresis, formerly known as *dementia paralytica*, is an organic psychosis resulting from syphilitic infection of the brain. The infection usually occurs in early adult life, but the onset of general paresis is generally delayed until middle life. The average age of patients at time of hospitalization is about forty-five. In recent years, about 6 per cent of first admissions to mental hospitals have been affected with this disease. Male patients exceed females in the ratio of 3 to 1. The incidence rate in urban communities is about three times as high as for rural areas. Foreign-born and native whites are about equally affected, but the incidence among Negroes is four times as great as among whites. With respect to economic and educational status, general-paresis patients are slightly inferior to other mental patients (20, 25).

Etiology.—All general-paresis patients are infected with syphilis, but less than 5 per cent of persons contracting syphilis develop general paresis (28). When the microscopic organisms responsible for syphilis gain entry into the body, they spread rapidly. The first stage of the disease is identified by a small, painless ulcer, or chancre, which appears at the site of inoculation about three weeks after infection. A month or two later, the second stage of the disease is manifested by the appearance of a generalized skin eruption. During the first and second stages, the skin lesions are teeming with live organisms and the disease is very infectious. Fortunately, however, the lesions soon heal spontaneously, and the disease passes into a latent, non-infectious period lasting 10 to 30 years or more.

If the condition remains untreated and the patient's immunological forces are not adequate to check the invasion action of the syphilitic organisms, the disease gradually proceeds to the terti-

ary stage, characterized by destruction of various organs of the body. When the syphilitic destruction is concentrated in the cerebral cortex and the patient presents psychotic symptoms, a diagnosis of general paresis is made.

To determine the existence of syphilitic involvement of the brain, a small amount of the cerebrospinal fluid that circulates in the spinal cord and the ventricles of the brain is withdrawn and chemically analyzed. The procedure consists of puncturing the lumbar, or lower, end of the spinal cord with a hypodermic needle and drawing off some of the spinal fluid. The fluid is then analyzed by means of the Wassermann, Kahn, and colloidal gold tests. Positive reactions on these tests indicate the presence of syphilitic organisms in the central nervous system.

Why paresis occurs in only about 1 out of 20 syphilitic patients is a medical mystery. Some explanations that have been offered are (a) there are various strains of syphilitic organisms, only a few of which produce paresis; (b) some individuals are less immune to the action of the syphilitic spirochete; and (c) only those individuals who would otherwise have developed some mental disorder develop paresis following infection.

Symptomatology.—General paresis has been called the Great Imitator, because its varied symptoms may simulate many diseases. Earliest indications may be physical complaints of headaches, dizzy spells, and increased fatigability. Initial mental abnormalities usually include changes in personality and conduct. The patient overlooks the social amenities, is careless of his personal appearance and habits, neglects business and family obligations, and often engages in reckless enterprises and immoral practices that are out of keeping with his previous ethical standards. Judgment is defective and memory is impaired. Periods of confusion and unreasonable emotional outbursts are common. Personal awareness of the gradual disintegration of the personality and the decline of critical faculties is lacking. The patient is unperturbed by his unkempt appearance, ruinous financial mistakes, and social transgressions.

As the disease progresses, early symptoms are exaggerated. The patient fails to recognize close relatives, is disoriented as to time and place, and is unable to give his age or the names of

his children. Speech is incoherent, thinking is confused, and serious criminal offenses may be unwittingly committed. At this stage, the patient is incapable of self-management and must be carefully supervised or institutionalized. Euphoria, depression, or apathy may dominate the emotional sphere. Grandiose, persecutory, or self-accusatory delusions of a bizarre nature are prevalent and hallucinations are occasionally noted.

The neurological damage produced by the syphilitic organism results in progressive weakness and poor muscular coordination. Speech is slurred, indistinct, or unintelligible. Test phrases such as "Methodist Episcopal" and "Third Irish Artillery Brigade" are inaccurately repeated. The handwriting is uneven, tremulous, and marked by omission and duplication of letters. In advanced cases it becomes an illegible scrawl. Gait is unsteady and bodily movements are clumsy. Damage to the visual apparatus produces varied ocular symptoms. In many instances, the pupils are irregular, unequal in size, or incapable of reacting normally to light. A substantial number have epileptiform convulsions. Unless checked by treatment, the disease usually terminates in gross deterioration of the total personality and early death.

ILLUSTRATIVE CASE

The following is an abstract of an interview with a grandiose patient.

Who are you?

"I am the doctor-superintendent of the whole hospital. I own the whole world, all the buildings and cities, the gold in the mines, the ships on the sea. They are all mine—everything."

Who is your father?

"I am the son of God and I inherited all his power and wealth. I am the supreme law of the world."

Why are you here?

"Why, this is my headquarters. I direct all my ships from here."

Isn't this a hospital?

"Yes. I am the doctor-superintendent of this hospital. I direct everything."

Are you very wealthy?

"I am the wealthiest man in the world. Feel my head—pure diamond, my chest—pure platinum, my muscles—all pure gold. My mouth is full of pearls."

Would you mind making a donation to me?

"Not at all. Give me a piece of paper and I will make out a check for \$100,000."

What kind of paper do you need?

"Any kind. Any piece of scrap paper will do."

Do you have any supernatural power?

"Of course. I am the son of God. I can do anything."

What are some of the things you can do?

"Anything you want. Anything at all."

Is there anything I can do for you?

"Yes, give me a cigarette."

Treatment and Prognosis.—General paresis may be prevented by prompt and adequate treatment during the first and second stages of infection. The longer treatment is delayed, the less favorable is the final outcome. Once the syphilitic invasion of the brain has proceeded to the point of diffuse cortical atrophy, the most that may be expected from treatment is an arrest of the disease process, with mental improvement within the limits determined by the extent of brain destruction. The specific treatment for general paresis consists of inducing an artificial fever in the patient. This may be done by malaria inoculation, injection of fever-producing vaccines, air-conditioning techniques, and various forms of electrical heating. Fever therapy is generally supplemented by injections of tryparsamide and bismuth.

Although fever therapy usually prevents further deterioration and greatly prolongs the life of the patient, it is by no means a cure-all. Before the introduction of fever therapy, spontaneous recoveries occurred in about 10 to 15 per cent of hospitalized patients. As a result of fever therapy, the percentage of partial or complete recoveries among institutionalized cases has been increased to about 45 (22).

Juvenile Paresis.—Syphilis is never inherited by genetic transmission, but a syphilitic mother may infect her child before or during birth. Also, like any other person, a child may acquire syphilis after birth by coming into contact with live syphilitic organisms. When the disease is present at birth, the condition is called *congenital syphilis*. Regardless of whether mental and physical defects of syphilitic origin are apparent during infancy, a small proportion of syphilitic children develop a juvenile form of paresis. Onset usually occurs between the ages of ten and sixteen. Both sexes are equally affected.

Symptoms include gross deterioration of intelligence and conduct, memory impairment, expansive or depressive emotional trends, convulsions, speech disturbances, pupillary changes, and other manifestations noted in the adult form of paresis. The brain pathology is essentially the same as in general paresis, but prognosis is much more unfavorable in youthful cases. Juvenile paresis is seldom affected by fever therapy and chemotherapy. As in the adult type, prevention and early treatment offer the best hope (21).

PSYCHOSES WITH CEREBRAL ARTERIOSCLEROSIS

The human brain consists of a large number of living cells that are nourished by a complex network of cerebral blood vessels. After middle life, there is a tendency in certain individuals for the cerebral arteries to harden, or to become sclerotic. When this happens, the arteries are no longer capable of conveying an adequate supply of blood to the brain cells, and the cells, lacking sufficient nutrition, waste away. Mental disturbances associated with this form of brain pathology are diagnosed *psychoses with cerebral arteriosclerosis*.

Why some persons are more prone than others to develop cerebral arteriosclerosis is unknown. The explanation of the psychosis is further complicated by the fact that many individuals who have never manifested neuropsychiatric disturbances are found at autopsy to have cerebral arteriosclerosis. Since this disorder is prevalent among illiterates and persons of low economic status, it does not appear that extensive brainwork is a predisposing

factor. Some suggested contributory factors are heredity, excessive eating and drinking, inadequate rest, and continuous worry.

Incidence.—Psychosis with cerebral arteriosclerosis is one of the most prevalent of mental disorders. It is responsible for 12 per cent of first admissions to mental hospitals (25), and predictions (29) are that about 2 per cent of the general population of either sex will develop the disease during their lifetime. In recent years it has shown the greatest increase of all mental disorders. Between 1910 and 1915, less than 10 per 100,000 of the general population forty years and over were admitted to state mental hospitals in New York because of cerebral arteriosclerosis. For the period 1935 to 1940, the incidence rate was slightly more than 50 per 100,000 (24).

The disease may occur in late middle life, but the average age of patients at time of hospital admission is between sixty-five and seventy. Native and foreign-born whites have the same incidence rate. On the basis of hospital admissions, the disease appears to be more than twice as prevalent in urban as in rural areas (20).

Symptomatology.—On the physical side, the most frequently occurring symptoms are dizzy spells, headache, undue fatigue, insomnia, and convulsions. Common mental reactions in the early stages include loss of initiative, impairment of attention, diminished capacity for work, confusion, irritability, depression, and mild memory interference (26). As the disease progresses, the severity of mental and emotional disturbances increases. The patient becomes forgetful and disoriented, and may manifest signs of gradual mental enfeeblement. Delusions of all types may be present, and the affective life is marked by instability, outbursts of rage, pronounced anxiety, and suicidal trends. For a time, the patient retains insight into his condition and is annoyed by the decline in mental and physical functions. Even in the advanced state, there may be fluctuating periods of lucidity. In individual cases the usual clinical picture is modified by the particular arteries involved. Thus the blocking of the middle cerebral artery, leading to atrophy of the left cerebral hemisphere, usually results in striking speech disorders in right-handed persons.

Treatment and Outcome.—Practically nothing is known concerning the cause, prevention, or treatment of cerebral arteriosclerosis. Spontaneous improvement occasionally occurs, but prognosis is usually unfavorable. The death rate is high, and only about 10 to 15 per cent of hospitalized patients are eventually discharged as improved (13).

SENILE PSYCHOSES

Normal Senile Changes.—Old age is a period of psychological as well as physical decline. Characteristic changes include confusion, failing memory, overconcern about one's health, irritability, suspiciousness, narrowing of interests, heightened selfishness, conservatism, anxiety, fear of death, penuriousness, restlessness, and opinionativeness. These traits are the results of a combination of factors, of which the most important are the progressive degeneration of the brain, the basic underlying personality, and the senile's reaction to his diminished capacity for achievement and pleasure.

Usually the psychological disturbances of senility remain within reasonable bounds and it is possible to care for the aged at home. However, in some individuals the normal senile changes are exaggerated to a point necessitating nursing and psychiatric care. These cases are diagnosed as *senile dementia* or *senile psychoses* (11).

Senile Psychoses.—An aged person may be adjudged insane and committed to a mental hospital for care and supervision when mental deterioration and personality abnormalities progress so far that he is grossly incapable of managing his affairs with ordinary prudence and when his behavior constitutes a source of annoyance or danger to others. The actual proportion of seniles who eventually become psychotic is unknown. Expectancy figures, based on hospital admissions, indicate that slightly more than 1 per cent of all persons born will eventually be committed to a mental hospital with a diagnosis of senile dementia. This is naturally a very conservative estimate, since many senile dements are cared for at home (29).

Senile psychoses account for about 9 per cent of first admis-

sions to mental hospitals. The mean age at time of first commitment is between seventy and seventy-five. When allowance is made for the fact that there are many more women than men in the old age groups, the incidence rates for the two sexes are closely similar. All educational and economic groups are susceptible, but there is some evidence that mental deterioration and psychotic disturbances are more marked among seniles of limited intelligence and attainments than among the more intelligent and successful. The hospital rate for urbanites is twice as high as for rural inhabitants (20).

Symptomatology.—The higher mental processes, including judgment and reasoning, are seriously impaired; loss of memory is particularly outstanding. The names of friends and relatives are forgotten, and great difficulty is experienced in recalling the names of common objects. Some patients more or less unconsciously fill in their memory gaps with fabricated recollections. Recent memory is especially defective. Events occurring from one week to another or from one minute to the next are poorly retained.

Seniles make poor conversationalists, since they are unable to remember what they have said and repeat themselves endlessly. Unless they pay close attention to what they are saying or doing, they forget the train of thought or the activity in progress and are unable to continue. Because of limited retention and concentration, they rarely amuse themselves by reading; their memory will not carry them from one episode in the story to the next. Many seniles are completely disoriented; they do not know who they are, fail to recognize the nature of their surroundings, and are disoriented as to time. When taking a walk, they easily become lost. Disorders in thinking result in confusion and bewilderment (16).

Altruistic feelings are notably lacking. To obtain attention, seniles occasionally will make a show of interest in another person, but fundamentally they are self-centered and have meager interest in things that are not of intimate personal concern. They are jealous, envious, and easily susceptible to flattery. Their affective life is often disturbed. Anxiety, agitation, depression, apathy, and irritability are some common reac-

tions. If thwarted, they become self-assertive, abusive, and assaultive. They adhere tenaciously to their habits and outmoded ideas, are intolerant of opposition and change, and frequently exhibit hoarding tendencies.

Occasionally there is an intensification of sexual excitement that may lead to exhibitionism, unwise marriages, and perverse sexual practices, particularly with children. Suspiciousness, ideas of neglect, paranoid trends, delirious reactions, and mild delusions are often present. Speech is limited or consists of empty chatter. Impaired motor coordination results in a shuffling gait and shaky handwriting. The sleep cycle is often altered; the patient roams restlessly about at night and sleeps during the day. Common physical symptoms include headaches, feelings of dizziness, and apoplectiform attacks (11).

Treatment and Prognosis.—Treatment is limited to nursing care and supervision. The course of the disease is progressive; only about 10 per cent of patients recover or improve. Because of the late age of onset of the disease, the death rate is high.

PSYCHOSES DUE TO DRUGS

Drug Addiction.—There are approximately 100,000 drug addicts in the United States (19). The drugs most commonly used are morphine, heroin, cocaine, and marijuana. Of the total number of addicts, only a small number develop neuropsychiatric reactions. Drug psychoses account for only a fraction of 1 per cent of admissions to mental hospitals. A somewhat larger number are annually sent to narcotic farms and prisons for "cure," but the vast majority evade the law.

Although addiction occurs among all classes, most of the cases that come under observation are underworld characters. Males tend to predominate. The incidence rate among the foreign born is about the same as that for the native born, and Negroes have a higher rate than whites. Addiction is less prevalent among the married than among the divorced, widowed, and single population. All age groups above fifteen are represented, but the heaviest concentration occurs between the ages of twenty-five and forty-five (30). With respect to educational

status and intelligence, persons addicted to the use of drugs compare favorably with the general population (7).

Etiology.—Some underlying personality instability is generally recognized as the basic cause. The explanation offered for the initial use of drugs varies with the type of user. The great majority of addicts who are licensed to deal in narcotics for professional or business reasons attribute their addiction to the previous use of drugs in medical treatment. Among the unregistered group, the initial use of drugs in medical treatment is also encountered, but the great majority attribute their addiction to association with other addicts, to a desire for new experiences or thrills, to bravado, to satisfy curiosity, to allay emotional distress, or to overcome drunkenness.

Treadway (30) divides the treatment of drug addiction into three phases: detoxication or physical rehabilitation; emotional stabilization and reeducation; and social placement and community supervision. Treatment is usually handicapped by lack of sincerity and cooperation on the part of the patient, since only a small proportion of drug addicts wish to be cured. They seek treatment primarily because of coercion by friends and relatives or because the law is at their heels. Morphine addicts sometimes seek treatment merely to decrease the amount of drug necessary to produce the desired effects.

Opium Series.—The eating and smoking of opium (the dried juice of a poppy grown in the Near and Far East) for its narcotic and intoxicating effects is an ancient custom. In this country, various derivatives of opium, particularly *morphine* and *heroin*, are used rather than opium itself. Morphine is taken by hypodermic injection, heroin by injection or snuffing.

Regardless of the drug used, the effects are about the same. Opium and its derivatives deaden pain of disease and induce relaxation and sleep. Small doses taken in the initial stages of addiction produce drowsiness. As long as the patient remains actively awake, his mind is clear and he converses freely and intelligently. If left to himself, the patient passes into a dream-like state, characterized by euphoria and flight of imagination. Mental processes appear to be accelerated, and passing thoughts are subjectively considered as brilliant. The prevailing feeling

tone is one of contentment. The patient generally awakens from this light sleep refreshed and apparently normal. Moderate doses produce deep, dreamless sleep, and with further increase in dosage, the sleep passes into a coma. An overdose results in death.

The continued use of opium, morphine, heroin, and other derivatives is attended by two serious consequences. To begin with, the organism becomes physiologically conditioned to the drug so that once the habit is firmly established, the patient is forced to continue taking the drug or else experience painful withdrawal symptoms. These symptoms include restlessness, intestinal cramps, profuse perspiration, hot flashes, chills, and digestive disorders. Secondly, a condition of tolerance is gradually developed, so that enormous doses must be taken to elicit their usual effects.

Eventually a point is reached where no amount of the drug produces euphoria. The most that can be expected is a relief from suffering. It is generally at this stage that the patient seeks treatment or is apprehended when attempting by theft, deception, or other illegal means to obtain the large amount of drug necessary or the funds with which to meet the ever-increasing costs. Prolonged abstinence during treatment or incarceration decreases the tolerance. If the drug habit is resumed after discharge, as usually happens, the patient is again able to experience euphoria with small doses until tolerance is once more increased.

Chronic use of morphine or heroin usually leads to progressive mental, moral, social, and physical deterioration. Confirmed addicts are often irritable, suspicious, unstable, and morose. A small number exhibit suicidal depression, delirium with hallucinations, confusion, and other psychotic symptoms. Nevertheless it is debatable whether these reactions are caused by opium and its derivatives or are independent of the drug. The fact that a person becomes an addict is itself indicative of underlying instability (1).

Cocaine.—Known among its users as "snow," cocaine is a habit-forming drug that is usually taken by snuffing. It is obtained from the leaves of certain species of coca trees. Cocaine addicts generally prefer to take the drug in company, and the

habit is almost always acquired through association with other addicts. One important reason why addicts snuff cocaine in groups is that it is a stimulant, and there is little point in solitary stimulation.

The emotional atmosphere during a cocaine party is somewhat similar to that of a boisterous drinking party. Mild doses tend to produce a state of euphoria and exhilaration. Ideas come freely and there is an increased pressure of activity. As the stimulating effects of the drug wear off, there is a reaction marked by depression, irritability, and general weakness.

Large doses sometimes result in a characteristic cocaine hallucinosis, consisting of terrifying visual and kinesthetic hallucinations. The patient feels things crawling under the skin and sees insects and worms going in and out of his flesh. Paranoid ideas are often expressed. Continued addiction generally produces severe moral deterioration. Unlike morphine, repeated use of cocaine does not increase tolerance, and discontinuance of the drug does not precipitate acute withdrawal symptoms. Despite these more favorable indications, the cocaine habit appears to be even more resistant than morphinism to permanent cure (1).

Marijuana.—The narcotic ingredient in marijuana is obtained from the resin of the dried flowering tops of the hemp plant. The drug is also known as *cannabis sativa*, *hashish*, and *loco weed*. Formerly the hemp plant was extensively cultivated in this country as a source of rope and twine, and it now grows wild in many regions. The plant is also widespread in many other countries. The two principal methods of use are through eating the dried tops and leaves of the plant or smoking these parts in marijuana cigarettes, sometimes referred to as "reefers."

The toxic effects are primarily limited to the higher nerve centers. Some users have reported as the first signs of intoxication an exaggerated state of well-being, accompanied by feelings of increased strength and power. In other cases the early effects of the drug consist of oppressive feelings of anxiety, general apprehension, and agonizing fear of death. A peculiar sense of unreality or detached amazement is frequently noted, and the user is astounded by all that takes place and by what he says and thinks. There is a subjective feeling of confusion and

oblivion; sensations of floating, or of the body gradually disintegrating, are common.

Closely allied to the feeling of unreality is the phenomenon of double consciousness, or dual personality. The personality seems to divide into two individuals, one critically rational and the other of a fantastic character. Subjects often speak of watching their other self become intoxicated.

With the onset of delirium, there appear bizarre visual and auditory illusions and hallucinations. Vivid pictures of great complexity and oceans of sound overwhelm the user. Spatial relations are distorted, and objects and persons shrink to microscopic proportions or assume gargantuan size. The time sense is profoundly disturbed. Time passes slowly. A second seems like several hours, and an hour lasts a year or more. A hypersensitivity to sound stimuli is often reported. When large doses are taken, the delirium gradually merges into a state of general motor weakness, fatigue, drowsiness, and sleep.

The effects of habitual use are not well established. The drug does not appear to be cumulative in its effect, and tolerance is not increased with continued usage. After its administration, some addicts develop a delirious rage, during which they may commit acts of violence. It has been alleged that the murderous frenzy of the Malay, characterized by running amok, is the result of habitual use of hashish. The modern word "assassin" is derived from "hashischin," a name assigned to Mohammedan hashish addicts who engaged in religious murders during the time of the Crusades. Unlike opium and its derivatives, the sudden discontinuance of marijuana does not result in withdrawal symptoms (6, 31).

Mescaline.—Mescaline is an intoxicating substance obtained from the buttonlike top of a certain type of cactus plant. In earlier days, mescal buttons were used by Indians of the Southwest during religious rites. Usually taken by mouth, mescaline acts primarily as a stimulant. It produces prolonged wakefulness and a sense of freedom from fatigue. The outstanding sensory disturbance is in the visual field. Infinitely beautiful and vividly colored images succeed one another in kaleidoscopic fashion. At times, however, the hallucinations are gruesome.

Other sensory fields are also affected, and mixed sensory impressions are not uncommon. A blue color may suggest a taste resembling phosphorus, and a sharp sound may produce an explosion of colors.

As in the case of marijuana intoxication, distortions in temporal and spatial perception are frequent. Experiments conducted with normal subjects indicate that mescaline is capable of inducing typical psychotic symptoms including mood changes, paranoid reactions, splitting of the personality, and disturbances of thinking and volition (14). The drug does not appear to be habit forming, and it is doubtful whether repeated use results in harmful after-effects.

Bromide Intoxication.—Bromides are sedatives which, if taken in excess over a period of time, may produce psychotic reactions. The usual symptoms noted in cases of slight intoxication are mild mental confusion, difficulty in concentration, tiredness, faulty memory, and disturbed sleep. Loss of appetite, slurred speech, digestive disorders, and skin eruptions are common. More advanced cases are characterized by delirious reactions, including fear, disorientation, bewilderment, and hallucinations. Treatment is aimed at eliminating the bromides from the system. This is accomplished by the administration of large quantities of ordinary table salt in fluids. The bromide reaction generally clears up within two weeks. However, if bromides have been taken as a means of controlling depression or excitement, their removal may expose underlying psychological disturbances (9).

PSYCHOSES DUE TO METALS

Lead, mercury, arsenic, and manganese when taken into the body in sufficient quantity produce complex somatic, neurological, and psychotic disturbances. These poisonous metals are usually inhaled in the form of vapors or dust particles, but they may also be absorbed in the body through the ingestion of foods, water, or objects containing them. Mild lead poisoning results in typical neurasthenic symptoms of fatigue, listlessness, and irritability. Acute conditions are characterized by stupor, mem-

ory impairment, confabulation, confusion, uncontrollable emotional outbursts, and convulsions.

Treatment consists of removing the lead from the circulatory system, and eventually from the body, by appropriate medication. Prognosis is favorable as long as the central nervous system is not involved, but damage to the cerebrum results in progressive mental deterioration and high mortality. Mercury poisoning may cause irritability, emotional outbursts, forgetfulness, and drowsiness. Arsenic and its compounds may give rise to stuporous or delirious reactions. Manganese poisoning results primarily in neurological symptoms such as masklike facial expression, muscular twitchings, monotonous voice, and sleepiness. Uncontrollable emotional outbursts are occasionally noted (23).

PSYCHOSES DUE TO GASES

Carbon monoxide is a poisonous gas, the product of incomplete combustion of coal and petroleum products. The hemoglobin cells, which normally act as oxygen carriers, have a greater affinity for carbon monoxide than for oxygen, so that when carbon monoxide is inhaled, it binds some of the hemoglobin cells and thus renders them incapable of carrying oxygen. This results in a deficiency of oxygen, which in turn produces structural changes of the brain cells.

Depending on the degree of carbon monoxide poisoning, the victim may recover completely, exhibit neuropsychiatric residual symptoms, or die from asphyxiation. The most common neuropsychiatric manifestations are memory impairment, confusion, apathy, loss of initiative, and general mental enfeeblement. Neurological motor disturbances are prevalent. Prognosis for mental symptoms may be favorable or unfavorable (27).

ENCEPHALITIS LETHARGICA

More popularly known as "sleeping sickness," this disease is caused by a filtrable virus that attacks the brain, resulting in diffuse degenerative changes chiefly concentrated in the region

of the midbrain and basal ganglia. Encephalitis appeared in epidemic form throughout Europe and America during the latter part of the First World War, and sporadic outbursts in various areas have been subsequently reported. Reactions similar to those occurring in *encephalitis lethargica* are sometimes noted in the course of measles, mumps, and other acute infectious diseases that produce inflammation of the brain.

The onset of epidemic encephalitis may take many forms (18). Often it is characterized by a sleep lasting several days or weeks, from which the patient may with some difficulty be awakened long enough to take nourishment. This lethargic condition is frequently associated with fever and double vision. A second common form, which may at times follow the sleepy state, is marked by restlessness, excitability, jerky movements, and convulsive seizures. Immediately following the acute stage, some patients become extremely overtalkative and overactive, and there may be a reversal of the sleep curve, with the patient sleeping during the day and staying awake at night. These postacute symptoms may gradually subside, but many individuals who apparently make a good recovery later exhibit neurological or psychological abnormalities.

The outstanding postencephalitic neurological manifestation, which occurs more often in adults than children, is the *Parkinsonian syndrome*. This consists of general muscular rigidity, resulting in a masklike face, monotonous speech, flexion of the arms, and bending forward of the body. The arms do not swing in walking and the gait is awkward.

Among children, the most impressive postencephalitic feature is a radical change in personality and character. Following an attack, children who previously had been well behaved often become impudent, mean, cruel, and unmanageable. They are restless, incapable of prolonged attention, and easily given to emotional outbursts. Self-control is apparently lost. Without provocation, they impulsively engage in all forms of destructive and delinquent behavior, so that institutionalization is usually necessary.

The effect of encephalitis upon intelligence is primarily de-

terminated by the age of the patient at time of onset; the younger the age, the greater the defect. Among children under five, the mental development may come to a complete standstill, so that if a child had a mental age of four years at time of onset of the disease, his mental age as an adult would still be about four years. Children affected between the ages of five and fourteen generally show some mental retardation, but if the onset of the disease is delayed until after mental maturity has been attained, the intellectual functions show practically no impairment (8, 10).

Prognosis is essentially unfavorable. There is no specific treatment for the acute state, and many patients die during the early stages. To some extent, the muscular rigidity of survivors who develop the Parkinsonian syndrome may be relaxed by the administration of certain drugs. Very little can be done to resocialize persons manifesting postencephalitic personality disturbances, or to prevent mental decline in those cases where it occurs. Encephalitic problem children frequently make satisfactory adjustments in an institutional setting, but upon discharge, relatively few continue their good behavior at home. The most hopeful reports indicate that, even with the best of training and reeducation, less than one-third recover sufficiently to resume their place in society (4).

TRAUMATIC PSYCHOSES

Head injuries and gunshot wounds involving damage to the brain occasionally produce mental disturbances, but such injuries are not an important cause of mental disease. Traumatic psychoses account for less than 1 per cent of annual admissions to mental hospitals. Symptoms commonly noted immediately after the head injury include headache, confusion, memory impairment, and emotional instability. Following the acute stages, some patients undergo a change in personality and disposition. Other manifestations include explosive emotional reactions, forgetfulness, convulsions, and progressive mental deterioration (5).

PSYCHOSES WITH BRAIN TUMOR

Mental disturbances are occasionally associated with brain tumors. Since autopsies are not available on all cases, the actual incidence of tumors in mental disease is unknown, but it is doubtful whether new growths or abnormal swellings within the cranium are responsible for more than 1 per cent of psychoses. Symptoms are exceedingly variable and in part determined by the site of the tumor. Some common symptoms are alterations in personality, irritability, somnolence, memory impairment, impulsive excitability, confusion, depression, hallucinations, speech disorders, convulsions, euphoria, apathy, and intellectual enfeeblement (15).

PSYCHOSES WITH PELLAGRA

Pellagra is a dietary disease resulting mainly from a deficiency of B-complex vitamins. It is found primarily in poor economic areas. The most common clinical manifestations are patchy pigmentation of the skin and alimentary-tract disturbances. A small percentage of cases exhibit neuropsychiatric symptoms, including lassitude, memory losses, delirium, and mood fluctuations. Recent findings indicate that the mental symptoms are quickly and dramatically relieved by the administration of nicotinic acid. In addition to nicotinic acid, treatment consists of a diet rich in green vegetables and other foods containing B-complex vitamins (2).

PSYCHOSES WITH HUNTINGTON'S CHOREA

Huntington's chorea is a hereditary disease of the nervous system marked by involuntary jerky movements and mental symptoms. It accounts for approximately 1 out of every 1,000 patients annually admitted to mental hospitals. The disease is transmitted in the manner of a dominant Mendelian trait. When one parent is affected, 50 per cent of the children will be similarly affected, but if the disease skips one generation, it will not

manifest itself in the next. If all children whose parents have Huntington's chorea would refrain from having children, the disease could be completely abolished in one generation; but the late onset of symptoms precludes this simple solution. Initial symptoms rarely appear before adulthood and may be delayed until middle life. The mean age of onset is in the late thirties. In the early stages, loss of motor control and mental peculiarities are not readily apparent. Over a period of years, the uncoordinated spasmodic movements gradually increase in severity "until the helpless sufferer is but a quivering wreck of his former self" (17).

Any and all voluntary muscles may be affected. In the more advanced stages, the face is contorted in ever-changing grimaces, the head twists this way and that, and the hands are ceaselessly engaged in jerky circular movements. Involuntary movements of the legs force the individual to stagger about helplessly. Though conscious and not in pain, he cannot inhibit or master the spontaneous activity of his muscles. Refuge from perpetual activity occurs only in sleep, when movements cease. Accompanying mental reactions include irritability, listlessness, paranoid trends, and progressive emotional and intellectual deterioration. Neurological findings point to general cortical and sub-cortical brain atrophy (12). It has been suggested that the genetic basis of the disease lies in some inherent defect in the vitality of the small cells of the *corpus striatum* (3). There is no effective treatment.

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CHAPTER XVI

EPILEPSY

From the earliest time, men of all races and levels of civilization have been afflicted with a variety of sudden and recurring attacks of cerebral origin, characterized by partial or complete loss of consciousness, with or without attending psychomotor disturbances. Generally of short duration, these attacks have been called the falling disease, fits, convulsions, seizures, and epilepsy. The last, derived from the Greek word meaning "seizure," is the most widely known. Like the other terms, "epilepsy" does not denote a specific disease but a symptom—a manifestation of some more fundamental disease process. However, since the attack is often the most vivid and distressing feature, it is not uncommon to refer to the disease by its symptom. This is especially true when the nature of the underlying disease is unknown.

Epilepsy and Brain Waves.—Over a half century ago, Hughlings Jackson (12, p. 100), the great English neurologist, defined epilepsy as "the name for occasional, sudden, excessive, rapid and local discharges of gray matter." The development of techniques for amplifying and recording the minute electrical discharges of brain tissue has confirmed Jackson's concept. It has been definitely established that the *electroencephalograms* (EEG), or brain waves, of epileptic patients differ greatly in amplitude and frequency from those of normal individuals. As compared with normal individuals, who exhibit a fairly constant brain rhythm having a mean frequency of 10 waves per second, the EEG rhythms of epileptics are abnormally large because of increased voltage and are either too fast or too slow. Rhythm abnormalities are most marked during an actual attack, but about 85 per cent of patients show transient disturbances of rhythm even when there is no objective or subjective evidence of a seizure. This finding has led some investigators to refer to

epilepsy as *cerebral dysrhythmia*. Although most characteristic of epilepsy, abnormal brain records have also been observed in a variety of unrelated disorders and in 10 per cent of normal individuals (16).

Incidence.—Estimates based on army recruits and surveys conducted in the United States and European countries indicate that approximately 1 out of every 250 persons in the general population is an epileptic (4). Some 4,000 new cases, less than 2 per cent of new admissions, are annually admitted to mental institutions in the United States (22). A small number go to special colonies for convulsive disorders and the remainder to schools for mental defectives or hospitals for nervous and mental disease.

Less than one-tenth of the estimated 500,000 epileptics in this country are at present in hospitals. The hospitalization rate is relatively low because the average epileptic patient is capable of leading an active and useful life with little or no outside supervision. In fact, many of them have made substantial contributions to society and a few have attained greatness. Julius Caesar, Peter the Great, Mohammed, Lord Byron, Flaubert, Berlioz, and Van Gogh are among the notables who had recurring fits. It is only when attacks seriously incapacitate a person, or when such complications as mental deficiency or psychotic reactions are present, that commitment becomes imperative.

Although more epileptic patients are being hospitalized today than in former years, there is no evidence that epilepsy is increasing in frequency. Military data, unaffected by extraneous factors associated with hospitalization, point to a stationary rate. In Sweden (25) during the quarter century 1911-1935, the number of annual rejections from military service because of seizures ranged from 2.2 to 2.4 per 1,000 conscripts. Similar conscript data for Holland, though limited to a shorter period, confirm the Swedish figures and, in addition, indicate that epilepsy is about equally prevalent in urban and rural communities. For the years 1933-1938, an average of 2.6 per 1,000 conscripts coming from communities of less than 5,000 inhabitants and 2.5 per 1,000 conscripts coming from cities with population in excess of

100,000 were rejected from military service on the grounds of epilepsy (11). The above rates are slightly lower than those reported for the general population because many individuals who are free of symptoms at the time of conscription have had seizures in the past or will have them later in life.

Age.—No age period is immune, but the onset of seizures generally occurs during childhood and early adolescence. The median age of patients at time of initial attack is between ten and fifteen (7, 21).

Sex.—Although more male than female patients are hospitalized, clinical data suggest that both sexes are about equally affected (15).

Frequency of Attacks.—There are wide individual differences in number of attacks. Some persons have only a few attacks during their life and others have several hundred a year.

CLASSIFICATION

Persons subject to seizures are usually classified as having either *symptomatic* or *idiopathic epilepsy*. The diagnosis of symptomatic epilepsy indicates that attacks are associated with, and are presumed due to, some definite brain pathology or toxic condition. Idiopathic, or *essential*, epilepsy includes those cases where seizures are not associated with any toxic condition or structural brain pathology. It is assumed that idiopathic epilepsy is due to some inherent constitutional defect. Approximately 30 per cent of first admissions to state institutions for epileptics are classified as symptomatic, 60 per cent as idiopathic, and 10 per cent are unclassified (22).

CLINICAL TYPES

A comprehensive analysis of the many forms of epilepsy has been reported by Wilson (31). The three main varieties are the *major*, or *grand mal*, the *minor*, or *petit mal*, and the *psychic* or *psychomotor* equivalent. Each of these forms may occur in either symptomatic or idiopathic cases, and the individual may exhibit one, two, or all three types. Two less important types

are *Jacksonian epilepsy* and *hysterical fits*. The former is limited to the symptomatic group. The latter, also known as *hystero-epilepsy*, is more akin to hysteria than epilepsy. It is considered in this chapter because it closely simulates actual seizures, and often is confused with them.

Grand Mal.—This is the most dramatic. Three phases—the *aura* or warning, the *convulsion* or attack proper, and the *post-convulsant* state—are generally distinguished. Preliminary signs heralding the attack in advance of the *aura* are sometimes noted a day or more beforehand. These may be muscular tics, sensory disturbances, and mood fluctuations. Some epileptics are morose and irritable for several hours before an attack. A few, like the Russian novelist Dostoevsky, experience great ecstasy during the preconvulsive period. Auras immediately preceding an attack occur in about 50 per cent of the cases. The *aura* is often the same for a given individual, so that, forewarned, the patient may in some measure prepare himself for the coming storm.

Among different persons, auras take myriad expressions including feelings of numbness or pain, impulsive running, visceral rumblings, temperature changes, choking sensations, or feelings of strangeness. Apprehension, happiness, and other emotional reactions have been noted. Hallucinations in all sensory fields are fairly common. Stoddart (27) has reported an interesting example of a recurring visual *aura*. Before the onset of the seizure, the patient would see 13 men standing before him. One by one, each of these men would turn and walk away until only one was left. This man would then strike the patient, and the blow would bring on the convulsion.

The onset of the fit proper is sudden. Consciousness is completely lost, and the patient, as if struck by an unseen blow, falls like a log, often injuring himself. In the first, or *tonic*, phase of the convulsion, the entire musculature is in a state of rigidity. The posture assumed is somewhat variable, depending in part on the nature of the fall. Usually the arms are flexed, the fists clenched, and the legs extended. The generalized spasm includes the muscles of the chest, abdomen, and larynx. The groanlike *epileptic cry*, sometimes heard at the onset of the

convulsion, results from either the sudden expelling or the inward suction of air. At first the face is pale, but it later becomes flushed and finally bluish as a result of respiratory interruption. The features are often contorted into a grimace. The eyes may be open or closed. The pupils are dilated and do not react to light.

After about 30 seconds the tonic immobility gives way to the *clonic* stage, consisting of rhythmical jerking movements of the entire body. These movements are bilaterally synchronous and are due to the alternating relaxation and sudden contraction of the muscles. Especially noticeable are the abrupt contractions of the muscles of the arms and legs and the snapping of the jaws. At first, the movements are rapid and their excursions are limited in range. Gradually they decrease in frequency to about one per second and increase in amplitude. With the development of clonic movements, breathing, often sonorous, is restored. Frothy saliva is usually present, and it is sometimes tinged with blood from a bitten tongue or cheek. Bladder and rectum are not infrequently emptied during an attack. The clonic phase continues for one to three minutes and is usually followed by a profound "sleep," or coma, of indefinite duration.

The postconvulsant period is of special psychological interest. Most patients spontaneously come out of the coma and return immediately to a normal mental state. They may complain of headaches and general malaise or feel relieved and refreshed. A few fare less well in that the attack proper is followed by a period of acute confusion, bewilderment, and emotional pathology. While under the influence of this clouded state, epileptics may impulsively engage in complicated automatisms, take objectless trips to strange places, undress in public, steal, destroy property, assault innocent bystanders, and participate in brutal crimes. Violent rage responses occurring during this period are termed *epileptic furor*. At times, the emotional mood is one of ecstasy tinged with religious exaltation. During the confused postconvulsant state, the patient is unaware of the significance of his actions, and he subsequently has an *amnesia* for events occurring during the *attack*.

Electrical disturbances in cortical activity precede the external manifestations of the convulsion. The *grand-mal* attack is generally associated with alterations in amplitude and increased

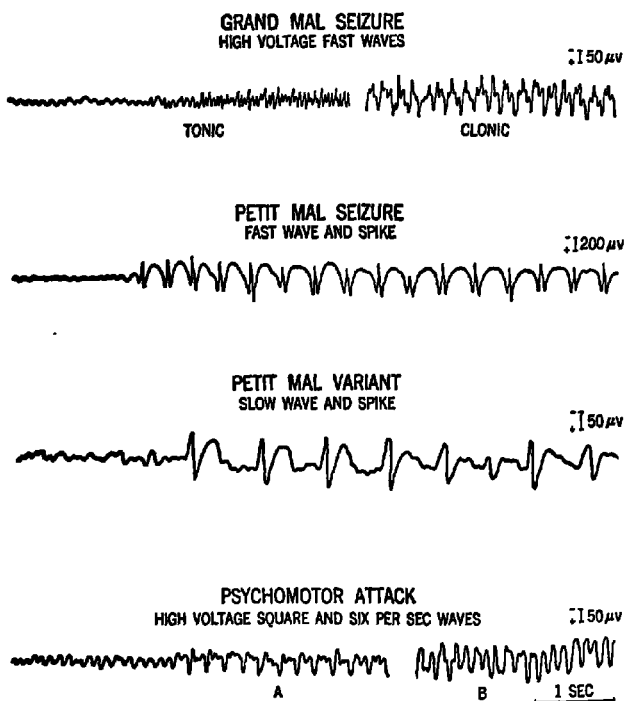


FIG. 12.—Representative electroencephalograms illustrating four different types of epileptic seizures. The portion on the left of each tracing is a sample of the individual's normal record. The rest of the tracing was made during an attack. (From Gibbs, F. A., E. L. Gibbs, and W. G. Lennox. *The influence of the blood sugar level on the wave and spike formation in petit mal epilepsy*. *Arch. Neurol. Psychiat.* Chicago, 1939, 41, 1112-1116.)

frequency of alpha rhythm. Fast, rhythmically repeated waves of relatively high amplitude, having a characteristic "explosive" quality, are present during the clonic phase. Concomitant with the coma phase there is a marked depression in all electric activity. The EEG record noted in Fig. 12 is fairly representative.

On rare occasions, a series of *grand-mal* attacks follow each other with no intervening periods of normal consciousness. A hundred or more consecutive convulsions may occur. This is called *status epilepticus*.

Petit Mal.—These minor attacks are usually not preceded by auras. The outstanding symptom is a temporary loss of consciousness that may range from seconds to minutes. The activities under way are suddenly interrupted and suspended by a period of "absence." There may be a fall, but more frequently the individual retains his posture. The only external physical signs may be a turning up of his eyes, nodding of his head, or the dropping of an object held in his hand. There may be a pause in his conversation, leaving a half-spoken sentence incomplete. Heedless of danger, the individual may stop in his tracks while crossing a busy street. His face is pale and completely expressionless.

The return to normal consciousness is generally sudden and complete. Unaware of their "absence," some victims continue their activities from the point where they left off. The sentence is completed or the walk is resumed as if nothing had happened. Under certain conditions, the individual may have attacks for several months before realizing their existence. At times, consciousness is partially retained, and the patient reports a dazed sensation, mental clouding, black-out, or sudden flash.

Minor attacks sometimes develop into major seizures, but this is by no means a fixed rule. It is not uncommon for both varieties to occur in the same individual. The brain waves in *petit mal*, as illustrated in Fig. 12, consist of an alternating fast and slow wave occurring at the rate of about three a second. This unique EEG pattern seems to be limited to *petit-mal* attacks.

Epileptic Equivalent.—The characteristic epileptiform convulsion may be replaced by an equivalent psychic or psychomotor seizure. The symptoms are quite similar to those already described under the postconvulsant state. There is a possibility that some of these reactions follow barely perceptible *petit-mal* attacks. Consciousness is greatly impaired. There are the usual automatic or absent-minded movements, emotional outbursts, and antisocial actions. During an epileptic equivalent attack

of a mild nature, the individual may continue what he is doing in seemingly normal fashion, but closer examination reveals certain peculiarities. In typing, the same sentence is retyped time and again, or in adding a column of figures, an unusual number of mistakes are made. Mental confusion is common. At a more serious level are found sudden outbursts of anger or running amok for no apparent cause. One patient, when having dinner with his family, suddenly tipped over the table heavily laden with dishes and food, and then proceeded to throw a chair through the window. Though rare, homicidal and suicidal attempts are sometimes encountered. There is a subsequent amnesia for activities engaged in during the attack.

In addition to content similarity, there are two further points of evidence indicating that these attacks are epileptic in nature. In the first place, they tend to occur among members of epileptic families or in individuals who subsequently develop attacks. Secondly, studies utilizing electroencephalography (Fig. 12) have shown that the distortions in the pattern of brain waves during an epileptic equivalent attack are fairly similar to the characteristic cerebral dysrhythmias present in the more usual form of epilepsy.

Jacksonian Epilepsy.—This is a localized or limited form of motor epilepsy in which spasmodic movements are restricted to certain groups of muscles, especially those under voluntary control, as the hands, face, and legs. Consciousness is retained and there is complete awareness of the attack in progress at which the victim is a helpless spectator.

The seizures result from specific cortical pathology. Occasionally, the convulsive twitches begin at one focal point and gradually spread in marchlike fashion to adjacent muscle groups until they eventually culminate in a generalized *grand-mal* attack. Since the EEG records obtained from healthy brain tissue differ in pattern from those recorded over injured areas, electroencephalography is of great value in these cases in determining the site of pathological excitation. It is frequently possible to remove the diseased brain area by surgery.

Hysterical Fits.—Although relatively rare today, hysterical fits resembling *grand-mal* attacks were at one time quite com-

mon. In the Middle Ages, they became the fashion throughout the convents of Europe and spread like an epidemic from one girl to another and from one convent to the next. On a much smaller scale, mass hysterical attacks were noted in some of the military hospital wards during the First World War.

Fits of this nature are the result of suggestion. The accuracy with which the epileptic attack is simulated depends upon the acting ability of the patient and his knowledge of the symptoms. The naïve hysterical individual screams, kicks, rolls about on the ground, assumes grotesque postures, pulls his hair, scratches and bites bystanders; but he is careful throughout the performance not to injure himself unduly. Uncontrollable crying or laughing may be present. Consciousness is retained during the fit, and the actions are often highly purposive.

There are many additional points of contrast. Epileptic attacks may occur at any hour of the day or night, and during the seizures the corneal reflex is absent, other bodily reflexes are disturbed, the pupils are dilated, and sphincter control is often lost. Hysterical fits never occur during sleep, and throughout the attack the eyes are tightly shut, but the corneal reflex and pupillary activity are within normal range. Sphincter control is maintained, and the fit ends with the patient feeling "better" rather than confused or stuporous.

As compared with the pale or bluish face of the epileptic, the face in hysteria is natural in color or flushed. Unlike genuine attacks that have a sudden onset and occur independent of external stimuli, hysterical fits generally follow some emotional disturbance or thwarting situation, have a gradual onset, and occur only in the presence of an audience. Their intensity and duration vary with the reactions of the audience. Epileptic attacks last two or three minutes, whereas hysterical fits may persist for hours.

Histrionically gifted hysterical individuals who have familiarized themselves with the symptoms of epilepsy may have very realistic attacks. Coordinated clonic movements are substituted for erratic kicks, a short epileptic cry replaces the continuous screaming, and the tongue may be purposely bitten to give a more convincing demonstration. However, there still remain

the reflexes and the pupillary changes, which are not under voluntary control and hence cannot be simulated.

Tony C was a petty thief who for a period of years evaded imprisonment by the simple expedient of throwing a very convincing *grand-mal* attack whenever arrested. This would lead to his being sent to the psychiatric division of the local general hospital, rather than to jail. After a brief period of observation, he would be discharged as not legally responsible for his actions because of a mental disease. On one occasion, however, he was sent to a mental hospital. Here a diagnosis of epilepsy was made on the basis of his past hospital record.

Incarceration in a mental hospital did not agree with Tony. After two months, he applied for his discharge on the grounds that his attacks were faked. To prove his point, he produced, upon request, an excellent counterpart of a major attack. His explanation was that, as a boy, he had shared a room in an orphanage with an epileptic child. Partly to torment his roommate and partly as a game, with continued practice he had developed the technique of imitating a fit.

ETIOLOGICAL AND PREDISPOSING FACTORS

Heredity.—Family studies, twin data, and electroencephalographic investigations indicate that susceptibility to epileptic seizures is mainly inherited. The principal experimental findings are summarized below.

1. Approximately one-third of institutionalized, and one-fifth of noninstitutionalized, epileptic patients have a family history of epilepsy. In contrast, only about 4 per cent of unselected individuals report seizures in any known relative (1, 16).

2. The expectancy of seizures among the parents, brothers, and sisters of epileptic patients is more than five times as great as that for the general population (15, 26).

3. When one of a pair of identical twins has seizures, from 61 to 67 per cent of their co-twins also have seizures. Excluding symptomatic cases, 86 per cent of the co-twins of idiopathic patients also have seizures (3, 24).

4. With respect to fraternal twins, the combined results of two studies show that when one twin is an epileptic, the other

co-twin is similarly affected in about 11 per cent of the cases (3, 24).

5. Cerebral dysrhythmia, which appears to be an inherited characteristic that predisposes an individual to have seizures, is present in about 85 per cent of epileptic patients during periods when they are free from attacks, in 53 per cent of their close relatives, and in only 10 per cent of the unselected general population (15, 16).

The above data definitely establish the importance of heredity and provide a clue to the physical basis. Seizure-prone individuals apparently inherit a somewhat unstable nervous system whose faulty functioning is revealed by abnormal brain waves. However, the etiological picture is not complete. Many individuals who inherit a predisposition do not have seizures. The nervous systems of identical twins are derived from the same genes, and the recorded electrical discharges of their brain cells are practically identical. Theoretically, all the co-twins of identical epileptic twins should have seizures, but actually only from 61 to 86 per cent are affected. Electroencephalographic data show similar inconsistencies. Ten per cent of the general population have abnormal brain rhythms that are similar to those encountered in patients with a history of epilepsy, but at most only 1 out of 20 have seizures.

The simplest explanation for these inconsistencies is that individuals do not inherit seizures. All that is inherited is a physical constitution which has a high or low potentiality for having seizures. If a person is highly predisposed, he will most likely have attacks. If he is only moderately predisposed, he may become an epileptic only if exposed to certain precipitating agents. The most likely precipitating factors are subtle imbalances in the biochemistry of the body and minor brain lesions incurred during or after birth. With respect to the latter point, it has been noted that first-born children, who presumably experience greater birth traumata, are more prone to have seizures (24). It is not improbable that part of the discordance noted among identical twin pairs is due to differences in order of birth, difficulty of delivery, and incidental head injuries in later life.

Head Injuries and Toxins.—Although brain lesions and biochemical disturbances are most likely to produce seizures in the constitutionally predisposed, they may, if sufficiently profound, induce attacks in individuals of sound heredity. One must guard, however, against attaching too much importance to physical causes. Even in those cases where seizures appear to be directly related to some obvious organic pathology, the etiology is usually complicated by hereditary factors. For example, the incidence of abnormal brain records among the near relatives of patients with symptomatic epilepsy is about the same as that noted among relatives of idiopathic patients (16); and the incidence of epilepsy among the relatives of symptomatic patients is about three times as high as that for the general population (15).

If head injuries alone sufficed to produce epilepsy, one should expect to find a high incidence among soldiers and civilians with head wounds. Actually, epilepsy is an infrequent complication, the incidence rate ranging from less than 5 per cent for head injuries of all types to about 35 per cent for the more serious cases (6). With respect to biochemical data, unselected epileptic patients tend to show greater than normal variability, but the findings are neither specific nor clear cut (10).

Emotional Stress.—Epileptic patients are often advised to avoid becoming excited, and it is undoubtedly true that a few cases are unfavorably affected by emotional disturbances. However, studies based on the reaction of epileptics to air raids suggest that the importance of emotional stress as a precipitating agent has been overemphasized. Fox (8) noted no increase in number of fits during the intense excitement and activity associated with air raids. At least 95 per cent of the patients were unperturbed by the dramatic experience.

TREATMENT AND PROGNOSIS

Attack Proper.—Little can or should be done while the attack is in progress. The short and relatively mild *petit-mal* attack requires no special attention. With respect to the major convulsion, it is desirable to protect the patient from injury by plac-

ing some soft object under his head during the attack. A handkerchief inserted in the mouth prevents biting of the tongue and lips, but this precaution is not always possible. Forcefully prying locked jaws apart may do the patient greater harm than good, and the would-be benefactor runs the risk of losing a finger.

Although terrifying to the spectator, *grand-mal* seizures are rarely fatal. Apart from injuries resulting from the fall or from violent clonic movements, the patient suffers no serious ill effects. Suffocation is a potential danger when attacks occur during sleep. Massive doses of bromides are often used to terminate attacks of *status epilepticus*. Outcome in these cases is usually unfavorable.

When violent excitement, confusion, and other psychotic manifestations are associated with attacks, it is best to institutionalize the patient. Institutionalization is also advisable in some instances where attacks are very frequent, home facilities are limited, or mental deficiency is a complicating factor. In other cases, precautions should be taken to ensure the welfare of the patient, as well as that of society, by prohibiting epileptics from driving cars or engaging in occupations where a fall or a brief period of unconsciousness means disaster.

Limiting Attacks.—There is no known cure for epilepsy, and prognosis is an individual matter. Some individuals have only a few attacks over a period of many years. Others spontaneously cease to have seizures as they grow older. Surgery offers some promise in a very small number of cases where a circumscribed brain area is affected. For the vast majority of patients, all that can be done is to decrease the number of seizures, make them as comfortable as possible, and hold mental deterioration to a minimum. A well-ordered but not inactive life, consisting of easily digested meals, regular hours, and some interesting but not arduous occupation, is a simple but sound program. A ketogenic diet, rich in fats but poor in starch and proteins, has been found helpful, but the diet is so unpleasant that most patients regard the treatment as more objectionable than the occasional seizures. The same holds true for the dehydration treatment, which aims at keeping the water intake to a minimum (29).

Drug therapy provides by far the most effective procedure for

reducing the frequency of attacks. The three drugs most extensively used are bromides, phenobarbital or luminal, and sodium dilantin. Continued administration often permits the individual to go for long periods without seizures. It has been experimentally demonstrated that these drugs raise the convulsion threshold (23) and have a normalizing effect on the brain rhythms (14). Drug therapy requires careful medical supervision, since excessive doses may lead to confusion, sluggishness, and more serious complications. Medication of this nature is only a palliative form of treatment. When the drugs are discontinued, the convulsions return, sometimes with increased frequency.

Personality Changes.—The patient as well as the attacks must be treated. It is as important to maintain a cheerful and healthy personality as it is to reduce the number of convulsions. Many institutionalized cases and a substantial number of private patients are egocentric, bad-tempered, and hypersensitive. Apathy and general dullness are not uncommon. Some years ago, Clark (2) maintained that traits of this nature were an expression of an inherent epileptic personality that antedated the convulsions and predisposed the individual to them. Today this interpretation claims few followers. The prevalent opinion (18) is that these unfavorable traits follow, rather than precede, the onset of epilepsy and are in large measure the result of the personal and social maladjustments of the patient.

The lot of an epileptic is not a pleasant one. Shunned and feared by his associates, rejected or pampered by his family, and frustrated in his search for affection and employment, it is little wonder that some become despondent, sullen, or irritable. Much can be done to improve this situation by the psychological treatment of the patient and his family. The first step is to persuade them to accept the disease openly. Concealment and secrecy merely intensify the difficulties. Oversolicitude or rejection on the part of the parents are equally undesirable. The attitude of the parent toward the epileptic child should be the same as that toward a normal child.

Insofar as possible, the patient should lead an active life and share in the usual tasks and responsibilities of the home. He

should be encouraged to compensate for his affliction, to succeed in spite of it, as so many other epileptic patients have done. The battle, however, will not be won until society's prejudice has been overcome. As long as the epileptic is shunned by his associates and denied work and friendship, he will retaliate with stubbornness, egocentricity, and aggressiveness, or he will withdraw his interests from the outside world and become dull and apathetic.

One solution to the disinclination of employers to hire epileptics is the establishment of special workshops. This has been tried in some European countries with considerable success. Having a job that permits him to be at least partially self-supporting enhances the self-esteem of the patient and improves his outlook on life. There is no better tonic for the personality.

Intelligence.—The distribution of intelligence among the healthy relatives of epileptic patients is about the same as that for the general population. Among private and clinical cases there are many individuals of outstanding mental ability. However, they are outnumbered by the many dull patients in institutions, so that for the epileptic population as a whole the mean IQ is from 10 to 15 points below average. In general, idiopathic epileptic patients tend to be brighter than symptomatic epileptics (28).

There are several factors contributing to the poor intellectual showing of persons with seizures. Cerebral injuries not only produce convulsions. They also interfere with normal mental development and thus lead to mental impairment ranging from mild retardation to complete idiocy. Secondly, the attacks may exercise a detrimental effect in their own right by producing brain lesions. Since performance on intelligence tests is influenced by amount of education, a third contributing factor is the irregular school attendance of epileptic children.

Mental retardation is most likely to result when convulsions occur early in life when the brain is highly vulnerable to injuries. In a group of children having onset of attacks before the age of six, Sullivan and Gahagen (28) found a mean IQ of 83 as compared with a mean IQ of 90 for children with onset from ages

six to twelve. Possibly because of their earlier onset, cases of long duration show greater mental impairment. With a decrease in number and intensity of seizures, mental losses are checked and some patients show subsequent improvement on test performance (13).

Contrary to what might be expected, there appears to be no significant correlation between frequency of attacks and subsequent mental progress. Children with frequent seizures do not decline mentally at a more rapid rate than do those having a few attacks (5). One significant point established by retest studies is the great individual variability. Some exhibit slight, if any, loss in intelligence, others show a gradual but consistent decrease, and still others deteriorate rapidly.

Mental Deficiency.—The prevalence of mental deficiency within the epileptic group, although considerably lower than formerly thought, is much higher than among the general population. The probability of the occurrence of feeble-mindedness varies inversely with the age at time of the first attack. Among mental defectives, the incidence of seizures increases inversely with mental level. In one study, convulsions were noted in 11 per cent of morons and 56 per cent of idiots (30).

Deterioration.—A few patients undergo profound deterioration involving all aspects of the personality. Their world is limited to simple biological functions. Interest in external events and in personal appearance and welfare is nil. There are no moments of enthusiasm, and spontaneity is completely lacking. Cerebration is either no longer possible or the effort is too great. There is a paucity of ideas and an emotional poverty. Responses to simple questions are slow, and the voice is flat and monotonous. Physically, the patient is run-down and untidy. The face, often marked with scars and discolored by medication, wears a vacuous expression. The physical framework is still present but all traces of personality have been blotted out.

Fortunately, this end stage is reached by only a small proportion of epileptic patients and is limited primarily to institutionalized cases. The possible occurrence of two forms of epilepsy—deteriorating and nondeteriorating—has been proposed by Pas-

kind and his associates (20), who have observed certain constitutional differences between the two forms.

EDUCATIONAL ASPECTS

It is best to excuse the epileptic child from regular school attendance when (a) the seizures are frequent and severe, (b) attendant confusion and personality disorders disturb or endanger other students, or (c) the IQ is below 80. If the child possesses normal or superior intelligence, it is desirable to retain him in his regular grade. Under such circumstances his classmates should be informed of the nature of attacks, so that their attitude will be one of understanding rather than disgust, fear, or ridicule.

In doubtful cases preference should be given to the welfare of the healthy students. Often this can be done without unduly penalizing the epileptic child, by home teaching or placement in a special class for handicapped, but not mentally defective, children. Of special significance is the vocational guidance of epileptics. They should be encouraged to prepare for safe occupations that will permit them to be self-supporting. At the college level, the majority do satisfactory work, but many do not.

EUGENIC IMPLICATIONS

To marry or not to marry is a dilemma faced by many epileptics. There are no fixed rules; each case must be decided on its own merits. Important factors are the frequency and severity of attacks and the personalities involved. In fairness, as well as a precaution against subsequent repercussions, the intended marital partner should be completely informed of the true state of affairs, preferably by the patient's physician. It is important to emphasize that marriage, intercourse, and pregnancy do not modify seizures. Domestic harmony is usually strained by the presence of seizures, and marriages often are unsuccessful. On the other hand, many persons with attacks are happily married.

Following marriage, there is the problem of children. To the patient, torn between a desire for children and an unwillingness to pass on his affliction to his offspring, genetic studies offer a

direct and comforting answer. Only about 3 per cent of the children of epileptic parentage develop seizures (15, 19). Although this is more than five times the expected incidence for unselected children, the actual risk is relatively low. For example, if a parent subject to seizures has one child, the chances would be about 36 to 1 in favor of the child's being free of seizures. If he has three children, the chances would be about 12 to 1 in favor of all three children's being unaffected. This probability may be further reduced if the patient wisely centers his affection upon a healthy individual who has normal brain rhythms and nonepileptic relatives.

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CHAPTER XVII

MENTAL DEFICIENCY

Mental deficiency is a condition of subnormal mental development, present at birth or early childhood and characterized mainly by limited intelligence and social inadequacy. A small proportion of mental defectives are marked by physical and anatomical peculiarities, but the great majority resemble normal individuals in general appearance, with the exception that their physical development is usually inferior. Commonly used terms that are synonymous with "mental deficiency" are *feeble-mindedness*, *amentia*, and *oligophrenia*.

Incidence.—The incidence of mental deficiency is dependent upon the stringency of the criteria employed and the age group studied. An unusually large proportion of the feeble-minded die early in life, so that the prevalence rate decreases with age. It is quite likely that as high as 5 per cent of infants under two years of age may be considered mentally defective. During the school years, the proportion drops to about 2 to 3 per cent, and by adulthood the feeble-minded constitute 1 per cent of the population (14, 34). On the basis of these estimates, there are more than 1,000,000 mental defectives in the United States. Of this number, only about 100,000, or less than one-tenth, are in institutions. The remainder are cared for, often inadequately, in their own homes.

Because of diagnostic difficulties and the presence of selective factors that may favor or hinder the detection of mental deficiency, it is impossible to state with any degree of certainty whether the incidence of feeble-mindedness is related to such factors as sex, race, and environment. The available data, however, suggest that mental deficiency is more prevalent among males than females, and more common in rural than urban areas (14, 30). The incidence rate among Negroes is higher than among whites. Ordinal position in the family is apparently

without significance. With maternal age held constant, the number of oldest, youngest, and middle children affected with mental deficiency agrees closely with theoretical expectancy (24).

GENERAL CHARACTERISTICS

Limited Intelligence.—Intelligence is a complex function that has been defined as the ability to learn useful information and skills, adapt to new problems and conditions of life, profit from past experiences, engage in abstract and creative thinking, employ critical judgment, avoid errors, surmount difficulties, and exercise foresight. The feeble-minded are markedly deficient in all these attributes. Their learning capacity, especially for abstract material such as reading and arithmetic, is so limited that, as children, the duller ones are excluded from school as ineducable and the brighter are placed in special classes where the curriculum is greatly simplified.

The teaching of mental defectives is a slow and tedious process. Learning depends more on rote memory than on understanding. Day after day, the same errors are repeated. Only the brightest among the feeble-minded can be taught to read, write, and do simple arithmetic. Moreover, these skills are soon lost unless they are constantly reinforced by review. However, it must not be inferred from this that mental defectives are totally lacking in intelligence. The absence of intelligence is relative rather than absolute. Even the lowest ament possesses some rudimentary intelligence, and high-grade defectives possess about two-thirds as much intelligence as normal individuals.

As is shown in Fig. 13, there is no sharp line of demarcation between the average and the feeble-minded person. The difference is one of degree. The range of human intelligence is continuous. Mentally defective, dull, average, bright, and superior individuals are separated from adjoining levels by imperceptible gradations. The feeble-minded are as inferior in mental ability to average children as average children are inferior to the mentally superior. This relationship may be expressed quantitatively on the basis of the *IQ* concept.

The *IQ*, or *intelligence quotient*, is a measure of brightness

obtained by dividing the individual's mental age, as determined by objective tests, by his chronological age. In calculating the IQ of adults, the chronological age is taken as fifteen, since most individuals attain their maximum level of intelligence at about that age. To eliminate the use of decimals the resulting quotient is multiplied by 100. Thus if a ten-year-old child had a mental age of 10, he would have an IQ of 100; if his mental age were 12, he would have an IQ of 120; and if his mental age were 8, he would have an IQ of 80.

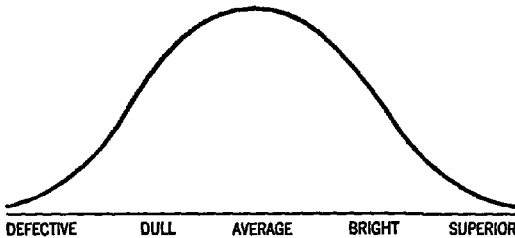


FIG. 13.—The distribution of intelligence in the general population. The gradation from mental deficiency to superiority is continuous. Relatively few individuals are located at the low and high end of the intelligence scale.

Surveys based on thousands of children have shown that the distribution of intelligence in the general population is bell-shaped. Most children have mental ages closely similar to their chronological ages. These individuals possess average or normal intelligence, and their range of IQ is arbitrarily set as from 90 to 110. In any large unselected group of children, there will be found a considerable number who have IQ's below 90 and an equal number with IQ's above 110. As we go down the scale from 90 IQ and up the scale from 110 IQ, the number of cases gradually decreases; but there are as many children who deviate 10, 30, or 50 IQ points *below* the average as there are persons who deviate 10, 30, or 50 points *above* the average.

For convenience in classification, individuals who are somewhat brighter than the average and have IQ's ranging from 110 to 130 are considered *bright*, and persons with IQ's over 130 are called *superior*. At the other end of the scale, individuals with IQ's ranging from 70 to 90 are classified as *dull* and individuals

with IQ's under 70 are classified as mentally defective. These limits are purely arbitrary. Instead of using an IQ of over 130 to designate the superior group and an IQ of less than 70 to designate the feeble-minded group, we could assume IQ's of over 135 and under 65 as the critical criteria. The important point is that neither the mentally superior nor the mentally defective are special groups sharply separated from the average. In each

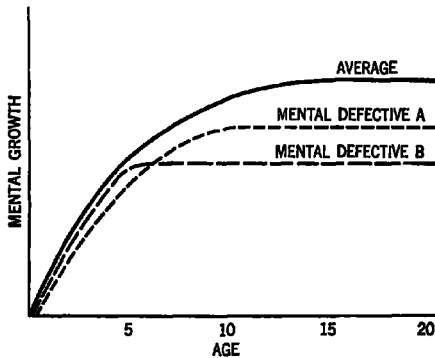


FIG. 14.—A comparison of the mental-growth curves of normal (average) and mentally defective children.

instance, the deviations from the normal are continuous and gradual.

The usual mental-growth curves of the feeble-minded as compared with that of normal children are shown in Fig. 14. Most mental defectives exhibit a pattern of mental development similar to that of normal children (Type A), but they start life with less mental ability, show a slower rate of annual increase, and reach their maximum level at an earlier age. In a minority of cases (Type B), the growth curve is normal for a few years and is then arrested for reasons that will be considered later in the chapter. In exceptional instances, there may be an actual decline in mental capacity following an arrest in development.

Social Insufficiency.—In addition to their deficiency in learning ability and other mental functions that may be measured by intelligence tests, the feeble-minded are incapable of adequate

self-care, self-support, or self-management in society. As children, they require an undue amount of assistance. They must be fed and dressed until a late age, carefully protected against accidents, supervised in their play with other children, and constantly told what to do. Unable to compete on equal terms with children of their own age, they generally prefer to associate with younger children.

As adults, they are largely dependent upon others for their economic welfare. In a study of extent of self-support among noninstitutionalized adult mental defectives, the British Mental Deficiency Committee (37) found that only 14 per cent of the men were almost self-supporting, 46 per cent were partially self-supporting, and the remainder contributed nothing. Among female defectives living in the community, the degree of self-support was even lower.

In addition to their economic inadequacy, adult mental defectives are incapable of handling their personal and social affairs with ordinary prudence. Unless guided and controlled, they are apt to engage in socially undesirable behavior, especially stealing, general destructiveness, and sex delinquencies. In this connection it is well to note that the antisocial and immoral actions of the feeble-minded are not due to any inherent badness. Like young children, mental defectives have little control over their impulses, their sense of right and wrong is poorly developed, and their behavior is determined by the immediate situation. Neglectful or ignorant of the consequences of their actions, they will steal when tempted, retaliate with destructiveness when angered or thwarted, and give free expression to their sexual urges when stimulated. With proper supervision these asocial reactions may usually be controlled.

The socioeconomic aspects of *amentia* have been especially emphasized by English writers. The 1929 Wood report (37, p. 10) defined mental deficiency as "a condition of incomplete development of mind of such a degree or kind as to render the individual incapable of adjusting himself to his social environment in a reasonably efficient and harmonious manner and to necessitate external care, supervision, or control."

In this country, the social criterion has been championed by

Doll (7), who has devised a special test, the Vineland Social Maturity Scale, for measuring social development. The test consists of many items involving self-help in eating and dressing, locomotion, occupation, communication, self-direction, and socialization. These are arranged in age sequence from birth to maturity. By determining a person's level of performance on the test, it is possible to obtain his social age. Dividing the social age by the chronological age gives a *social quotient*, or *SQ*, which may be used to supplement the IQ in arriving at a diagnosis of feeble-mindedness.

Other Mental Functions.—It is difficult to arouse, and hold the attention of, mental defectives. Their interests are few and they are easily distracted. As a consequence, they are relatively incapable of persistent application to any task. Their memory span is extremely limited and their power of retention is poor. To be understood, instructions must be brief and simple. Their reactions to words and pictures are characterized by a poverty of associations. Mental defectives have little imagination or creative ability. The brighter ones may engage in simple daydreams dealing with immediate wishes, but the lower grades are quite content to rest their feeble brains. Thinking is too strenuous and is generally avoided.

Drives and Emotions.—The development of drives and emotions varies greatly with the degree of feeble-mindedness. Some of the lowest grades fail to show even basic self-preservation drives. They give little or no overt manifestations of hunger or thirst and make no attempt to avoid injurious stimuli. Their emotional life is inferior to that of many animals. At the intermediate level, biological drives, with the possible exception of heterosexuality, are usually well developed, but the affective life is mainly limited to the simpler emotions of pleasure, fear, anger, hate, and surprise. The highest grades experience about the same range of emotions as normal individuals, but their feelings are lacking in richness, subtlety, and intensity. They rarely experience complex sentiments involving honor, duty, and social righteousness (36).

Personality.—No two mental defectives have precisely the same personality, but individual differences appear to be less

pronounced than among the general population. Among the feeble-minded, it is rare to find persons who might be described as dynamic, charming, forceful, vicious, obnoxious, or otherwise outstanding. The great majority of defectives are colorless, tractable individuals. As a group, they tend to be submissive and easily influenced. In temperament, they are usually stable and apathetic, but a fair number are unstable and excitable (36).

Organismic Inferiority.—The subnormality of the feeble-minded is most marked with respect to mental and social development, but it is by no means limited to these fields. As a group, they suffer from a general structural and functional inferiority of the entire organism. They learn to walk and talk at a much later age than average children, and they rarely gain proficiency in these simple functions (20, 35). Their speech is often defective and they tend to walk with a shuffling gait. Sensory discrimination is less acute than in normal individuals. Visual and auditory defects are common at all levels. The lower grade defectives appear to be relatively insensitive to pain, obnoxious odors, and disagreeable tastes (36).

Although less retarded in motor coordination than in language development, mental defectives fall short of normal performance on tests of manual dexterity or mechanical ability. Physically, the great majority are undersized, unhealthy looking, and afflicted with a high incidence of anatomical and physical defects. They possess far less strength and endurance than the average person. Their resistance to physical diseases is low, and their mortality rate is much higher than that for the general population. The organismic inferiority is roughly proportional to the degree of mental deficiency (10).

DEGREE OF DEFICIENCY

Depending on the extent of their defect, the feeble-minded are classified as *idiots*, *imbeciles*, and *morons* (8). This is an artificial division, since the three groups are not separated by any sharp line of demarcation. The gradation from one level to the next is continuous.

Idiocy is the lowest grade. Idiots have IQ's under 20, and their maximum level of mental or social development is less than three years. Even as adults, they must be cared for as if they were infants. They require assistance in dressing, washing, and eating and must be protected against common physical dangers. They possess less capacity for self-care than animals. Language is limited to a few simple words or grunts.

Imbecility is an intermediate state. Imbeciles have IQ's from 20 to 50. They may attain mental ages ranging from three to seven and a half years. They can be taught to care for their simple bodily needs and to protect themselves against common physical danger, for example avoiding fire, getting out of the way of an approaching car, and coming in out of the rain. They are, however, incapable of profiting from ordinary schoolwork. With intensive training, the most gifted imbeciles, when fifteen years of age, can barely master first-grade work. If physically well developed, they may be trained to run errands, sweep floors, feed animals, and do simple weeding. They are incapable of earning their own living and must be closely supervised as well as supported.

Morosity is the highest grade of mental deficiency. There is no universally accepted upper level of intelligence. Mental age may range from seven and a half to ten and a half years. Persons with IQ's from 50 to 60 are usually regarded as morons, but persons with IQ's from 60 to 70 may also be diagnosed as mental defectives. A deciding point is their social maturity. The English Mental Deficiency Act of 1913 defines morons as "persons in whose case there exists from birth or from an early age mental defectiveness not amounting to imbecility, yet so pronounced that they require care, supervision, and control for their own protection or for the protection of others, or, in the case of children, that they, by reason of such defectiveness, appear to be permanently incapable of receiving proper benefit from the instruction in ordinary schools."

When properly taught, morons can learn to read, write, and do simple arithmetic. They rarely, however, attain scholastic achievements beyond the fourth-grade level. Under favorable circumstances they are capable of earning a living or at least

contributing to their support. Morons may be trained to do general housework, ordinary laundry work, set table, mow lawns, distribute newspapers, and care for animals. If carefully managed, they may do satisfactory farm and factory work of a semi-skilled nature. However, even self-supporting defectives are incapable of independent social adjustment. Unless supervised, they spend their earnings foolishly, make no plans for the future, and are prone to engage in undesirable and delinquent social activities.

To a less marked degree, the interrelationship noted above for the three groups also holds for physical traits. The average moron is taller, stronger, has fewer physical defects, and enjoys a longer life span than the average imbecile. In turn, the average imbecile has a better physique, fewer physical defects, and a longer life span than the average idiot (5, 6).

The number of imbeciles is greater than the number of idiots, and the number of morons exceeds the number of imbeciles and idiots combined. Field surveys (14) indicate that for every 100 mental defectives in the general population, 5 are idiots, 20 are imbeciles, and 75 are morons. Since the lower grades require more care and supervision than morons, figures based on institutionalized cases show a relatively higher proportion of idiots and imbeciles. For every 100 mental defectives admitted to state institutions each year, about 15 are idiots, 30 are imbeciles, 45 are morons, and the remainder are unascertained (22).

FAMILY BACKGROUND

Morons are found at all social strata, but the great majority are concentrated in slums and deteriorated farm areas. The children of the unskilled and semiskilled groups include a much higher proportion of morons than do the children of the professional, business-clerical, and skilled groups. On the other hand, idiots and imbeciles are noted with about equal frequency in all types of districts and at all cultural and occupational levels. In classifying the homes of mentally defective children living in representative areas of England and Wales, Lewis (14) found that 11 per cent of the morons, 30 per cent of the imbeciles, and

33 per cent of the idiots came from good or superior homes; whereas 62 per cent of the morons, 35 per cent of the imbeciles, and 27 per cent of the idiots came from poor or very poor homes.

The cultural superiority of the lower grade defectives has been further confirmed by the study of the mental status of relatives of mental defectives. Several investigators have observed a higher incidence of feeble-mindedness among the relatives of morons than among the relatives of idiots and imbeciles, and on standardized intelligence tests, relatives of higher grade defectives earn lower scores than relatives of lower grade defectives (27).

One explanation for this inverse ratio between degree of deficiency and cultural status is that a large number of idiots and imbeciles are defective because of birth injuries, endocrine disturbances, and other external agents that may strike at random in the population. Children so affected have a better chance of survival if their parents can afford prolonged nursing and medical care. A second explanation is that idiots and imbeciles are often the product of recessive hereditary factors, whereas morons more frequently owe their mental status to the interaction of dominant additive genetic factors. Stated less technically, heredity operates somewhat differently among idiots and imbeciles than among morons. In the former groups, the parents are more often normal or above average in intelligence, but each parent passes on to the offspring recessive genes that, when combined in the child, result in mental deficiency. With respect to morons, the genetic factors, being more dominant, are more likely to produce mental retardation in the parent as well as the offspring, but usually the mental defect is less pronounced in the parent.

CLASSIFICATION

There are many types of mental deficiencies. Each type has a more or less independent origin and is characterized by distinctive symptomatic features. The two systems of classification that have gained widest recognition are those proposed by Tredgold and by Lewis.

Primary-Secondary.—Tredgold (36) has divided amentia into two main forms, which he has called *primary* and *secondary*. All degrees of deficiency may occur in either form, but there is a tendency for secondary aments to be less intelligent than primary aments. Primary amentia includes all cases where the mental deficiency is hereditary or due to some impairment of the germ cells which precludes the possibility of normal mental growth and independent social adaptation. Tredgold estimates that 80 per cent of mental defectives are of the primary type. Seventy-three per cent present no distinguishing physical features. They are classified as simple primary aments. Five per cent are Mongols, and the remaining 2 per cent are microcephalics, sclerotics, and other rare types.

Secondary amentia includes all clinical varieties in which there is no inherent germ impairment but in which normal mental development is interfered with by adverse external factors acting after fertilization. Secondary amentia is acquired rather than inherited. Thus a child may inherit genes having the potentiality of producing a perfectly normal brain, but he may become feeble-minded as a consequence of cerebral damage occurring before or after birth. The extent of mental retardation depends on the nature and site of the brain injury and the age of the child. Cortical destruction occurring before birth or during infancy usually results in more severe mental defects than injuries occurring in later years. Twenty per cent of all aments are classified as *secondary*. Eleven per cent are due to lesions of the brain or membranes following infections, 5 per cent to traumatic brain injuries, 2.5 per cent to imperfection of brain development caused by deprivation of hormones, nutritional deficiencies, or social isolation, and 1.5 per cent are due to arrest of neuronic development as an incidental phase in a degenerative process.

The main objection against this classification is that in a large proportion of cases it is impossible to decide whether the mental deficiency is of a hereditary or an acquired nature. As Tredgold concedes, unfavorable environmental influences are often present in primary amentia, and many workers find it difficult to evaluate the importance of these external factors. Tredgold dis-

poses of this objection by regarding adverse external influences in cases of primary amentia as concomitant, rather than contributory, factors.

Subcultural-pathological.—Lewis (15) has classified mental defectives into two main categories, the *subcultural* and the *pathological*. Most feeble-minded individuals are of the subcultural type. In mental endowment they differ only quantitatively from the normal population. In the same way that short people represent the low end of the height scale of the general population, subcultural aments represent the low end of the intelligence scale of the general population. Pathological aments, on the other hand, do not represent the extreme end of normal variation. They are a distinct group differing as sharply in mental make-up from the general population as dwarfs differ in height.

Even with respect to physical traits, the pathological group deviates more markedly than the subcultural from the general population. Subcultural aments for the most part resemble normal people in general appearance, but pathological aments exhibit anatomical and physical abnormalities. Although all degrees of deficiencies may occur in either group, subcultural aments are generally brighter. Heredity is the main factor in the production of subcultural cases, and pathological amentia is invariably associated with, and usually due to, some definite organic lesion or abnormality. According to Lewis, aments of the pathological variety are found evenly distributed among all sections of the community, but the subcultural group is concentrated in slum areas. Although far less rigid, this classification is somewhat similar to that suggested by Tredgold. Most of the clinical types classified under the heading of secondary amentia are pathological cases, but Lewis also includes in the pathological category some types of feeble-mindedness regarded by Tredgold as examples of primary amentia.

ETIOLOGICAL AND PREDISPOSING FACTORS

Heredity.—There are many causes of feeble-mindedness, and a large number of cases are the result of the interaction of two

or more contributory factors. Family and twin studies, however, indicate that heredity is the outstanding cause. From 50 to 75 per cent of mental defectives come from families having a history of feeble-mindedness or borderline intelligence (11, 23). Where heredity is constant, as with identical twins, it is rare to find one twin normal and the other feeble-minded. In a study of identical and fraternal twins selected on the basis that one member of each pair was a mental defective, Rosanoff and his associates (32) found that both co-twins were mentally defective in 91 per cent of the identical, and in 53 per cent of the fraternal, twin pairs. Similar findings have been reported by Juda (13).

Other Causes.—Brain abnormalities associated with birth injuries, infectious diseases, endocrine imbalances, epilepsy, and other neurophysiological disorders account for about 25 per cent of cases. There is no scientific basis for the prevalent belief that alcoholic parents are prone to give birth to feeble-minded children. The intelligence of the children of alcoholic parents is determined by the intelligence of the parents. Mentally retarded alcoholic parents frequently have dull children, but intelligent alcoholic parents usually have intelligent children.

Consanguinity is a second alleged cause of amentia that is frequently exaggerated. Children resulting from the mating of cousins or other close relatives run an increased risk of being mentally defective only when defective recessive characters responsible for various forms of amentia are present in the family stock. Under this condition, consanguineous matings tend to concentrate the defective genes in the offspring, thus increasing the possibility of their overt manifestation. When the family stock is sound, the offspring of consanguineous matings suffer no deleterious mental effects.

CLINICAL TYPES

Simple.—From 60 to 70 per cent of mental defectives present no distinguishing physical characteristics. They look very much like normal persons, with the exception that, as a group, they have less attractive features, are undersized, and have a larger number of physical defects. Studies of the brains of these indi-

viduals show no specific abnormalities. About two-thirds are morons and the remainder are mainly imbeciles.

Although unfavorable environmental surroundings and limited education may accentuate the degree of mental defect as measured by intelligence tests, it is generally agreed that the basic cause of simple feeble-mindedness is heredity. Most mental defectives of this type are the offspring of dull parents who are unskilled workers. It is not rare to find more than one mental defective in the same family, but, because of normal variations in intelligence that exist in all families, the brothers and sisters of mental defectives usually have IQ's ranging from 80 to 95. A small number of simple aments, however, come from fairly good homes. In such cases it may be assumed that although the parents possess average, or above average, intelligence, they are the carriers of defective recessive genes that may occasionally result in one or more of their children being mentally defective (23).

Mongolism.—Mental defectives whose facial features bear a superficial resemblance to Oriental people are classified as *Mongols*. The disease occurs among Negroes as well as whites (18), and it is probable that Oriental children are also affected. Wealthy and intelligent parents are as likely to give birth to Mongol children as are the poor and illiterate. It has been estimated that close to 50 per cent of children diagnosed as feeble-minded during the first year are Mongols. In later years, however, Mongolism constitutes only about 5 per cent of the total mental defective group. This is partly due to the early death of Mongols and partly to the fact that, with increasing age, other defective children who escape detection in infancy are eventually recognized as feeble-minded.

Mongols appear to be alert, lively, and bright, but test results show that about two-thirds are imbeciles and the remaining one-third are idiots. Speech is greatly delayed and some never learn to talk. In personality make-up they are generally affectionate, good-natured, and tractable. The principal physical anomalies are listed below. These characteristics, apparent from birth, are not present in the same degree in all Mongols, and some of the traits are totally lacking in individual cases. As a group,

however, unrelated Mongols look sufficiently alike to be mistaken for brothers and sisters (Fig. 15).

COMMON PHYSICAL TRAITS OF MONGOLS

Skull is small and rounded.

Front and back of the head are flat.

Prominent cheekbones.

Eyes have a downward and inward slope.

Tongue is usually large, flabby, and deeply fissured.

The mucous lining of the nose and mouth is frequently defective.

Stature is short, and underweight is prevalent.

Hands are broad, stubby, and flabby.

Thumb and little finger are abnormally short.

A wide space is often present between first and second toes.

Nose is short and squat, with a depressed bridge.

Lips are often thick and turned out.

Ears are of unusual size and shape.

Dentition is delayed and irregular.

Joints are extremely lax and mobile.

At times, Mongolism has been interpreted as caused by syphilis, parental alcoholism, reversion to a previous ancestral type, vitamin deficiency, endocrine imbalance, the use of contraceptives, diminished viability of the ovum, exhaustion of the mother, fetal injuries, incomplete prenatal development, and heredity. Experimental findings lend support to two main theories, the intra-uterine environment and heredity.

The former theory is based on the well-established fact that mothers of Mongol children are usually considerably older than mothers of normal children (3, 25). Because of the advanced age of the mother, the Mongol child is frequently the last child born in the family. The age of the father is insignificant. These observations have prompted several investigators to attribute Mongolism to rigidity or pathology of the uterus and various vascular, endocrinological, and nutritional deficiencies that are more apt to be present in older women, and in women who have already given birth to many children, than in young women having their first child.

A criticism of this theory is that Mongols may be born to women of all ages and may occur in any position in the family. Also, it is not uncommon for a mother who has given birth to a



FIG. 15.—Some clinical types of mental defectives. (A) hydrocephalic baby, (B) Mongolian idiot, (C) cretin dwarf, (D) simple ament holding a microcephalic idiot.

Mongol child to have normal children subsequently. These criticisms, naturally, do not completely rule out the importance of the age of the mother and the significance of the intra-uterine environment. Hemorrhages and uterine disturbances, present during an earlier pregnancy that resulted in the birth of a Mongol, may not be present during subsequent normal births. More damaging evidence against the intra-uterine theory is provided by an analysis of twin births. If the age and physical condition of the mother were the cause of Mongolism, it would be logical to assume that in the case of twins, if one member were a Mongol, the other should be similarly affected. Actually, many cases have been reported where one of a twin pair was a Mongol and the other was perfectly normal.

In addition to weakening the intra-uterine theory, data based on Mongolism in twins strengthen the hereditary theory. It has been observed that in all cases where both members of a twin pair have been Mongols, the twins have always been of the same sex; but in all cases where the twins have been of the opposite sex, only one member of each pair has been a Mongol (31). Since identical twins are always of the same sex and opposite-sexed twins are always fraternal, these data strongly emphasize the significance of genetic factors. Family studies lend additional support to heredity. As has been noted by Penrose (24), Mongolism occurs in about 1 out of every 1,000 children born in the unselected general population, but in families where one member is a Mongol, 1 out of 50 children born to blood relatives is also a Mongol.

Microcephaly.—Popularly called “pinheads,” *microcephalics* are mental defectives having tiny heads. Less than 1 per cent of the feeble-minded population are of this type. Microcephalics tend to be uninhibited in their emotional expressions, and they are restless and quick in their movements. A few possess the mental ability of morons, but the great majority are imbeciles and idiots. They are somewhat below average in stature and have a relatively short life span. Their brains are small and poorly developed. The cause of microcephaly is not definitely known. There is some evidence that mothers who, for therapeutic purposes, are subjected to pelvic X-ray irradiation during

pregnancy are likely to give birth to microcephalics. In a study of 53 mothers who received pelvic X-ray irradiation treatment during the period of their pregnancy, Murphy (19) noted that 26 per cent of the children who had been exposed to X rays while *in utero* were microcephalics. Although admitting the presence of abnormalities of the fetal environment in some instances, Tredgold believes that most cases of microcephaly are the result of pathological variation of the germ cell (36).

Traumatic Amentia.—Brain injuries account for about 5 to 10 per cent of all cases of mental defect. The cerebral damage may be inflicted before, during, or after birth, but most cases are due to intracranial lesions and hemorrhages occurring during birth. In the latter cases, there is usually a history of difficult labor, with or without instrumental delivery. Severe head injuries occurring before or after birth occasionally result in mental deficiency. This explanation is greatly overemphasized by mothers, who usually attribute the mental retardation of their children to an accident they had while they were pregnant or to a head injury experienced by the child as a result of a fall during infancy.

The after-effects of brain injuries vary with the location and extent of the lesions. Following birth injuries, some children exhibit no serious posttraumatic mental or physical impairment, others may present only physical symptoms or only mental defect, and still others may exhibit mental deficiency accompanied by spastic motor paralysis or convulsions, or both. The degree of mental defect present in traumatic amentia may range from idiocy to high-grade moronity (9).

Hydrocephaly.—When cerebral spinal fluid collects in excessive amounts inside the head cavity, as a result of some obstruction in the path of circulation or insufficient absorption, it produces a general enlargement of the skull. The resulting large cranium is technically known as *hydrocephalus*. The fluid may collect in the ventricle spaces within the brain or in the subarachnoid space outside the brain. The former is called *inner hydrocephalus*; the latter, *external hydrocephalus*. External hydrocephalus is rarely associated with mental deficiency. Per-

sons suffering from inner hydrocephalus may exhibit all degrees of mental deficiency or they may possess normal intelligence.

Hydrocephaly accounts for about 1 per cent of feeble-minded cases. It is often accompanied by a paralysis of the limbs, especially the legs. Some of the many stated causes of hydrocephalus are congenital syphilis, intracranial birth injuries, brain tumors, and meningitic inflammations. The condition may be present at birth or may develop subsequently. The disease process tends to be progressive, but spontaneous cures and arrest in development at a stationary level occasionally occur. Prognosis varies with age; the younger the age of onset, the less favorable the outcome. Attempts to treat the disease by surgical operations, the draining of excess fluid, and other measures have met with doubtful success (17).

Cretinism.—About 1 per cent of mental defectives admitted to public institutions owe their condition to a deficiency of thyroxine, the hormone of the thyroid gland, during infancy or early childhood. The thyroid deficiency is due to a relative absence of iodine in the diet of the child. Cretins are malformed dwarfs with a bloated appearance. Their dry skin hangs in folds; the mouth, half opened by an oversized tongue, is further distorted by thick lips; and swollen eyelids frame the small lusterless eyes. Because of their low metabolic rate, unoxidized food accumulates in the body to produce obesity. Emotionally, cretins are dull and apathetic. The brain, like other tissues, fails to develop normally. About 80 per cent are imbeciles or morons. If initiated early in the course of the disease, thyroid medication will often bring about a disappearance of the physical symptoms and some mental improvement. In established cases, treatment is relatively ineffective.

Congenital Syphilis.—Children born to syphilitic mothers are sometimes infected with the disease through the placental circulation while still *in utero*. Many of these cases terminate in abortion or are born dead. Of those born alive, a large proportion show normal mental development, but others are retarded or feeble-minded. The relative importance of syphilis in the production of amentia is often exaggerated. Most authorities (1) agree that less than 5 per cent of mental deficiency is

directly due to congenital syphilis. Some children who have a positive Wassermann really owe their mental defect to the fact that their mothers were feeble-minded as well as syphilitic.

Most mental defectives with congenital syphilis are idiots or imbeciles. It is not uncommon for these cases to be afflicted with various physical handicaps, especially paralysis of the limbs, epilepsy, blindness, and deaf-mutism. A diagnosis of mental deficiency with congenital syphilis is generally restricted to syphilitic children who present signs of feeble-mindedness during infancy or early childhood. Infected children who show normal mental growth until about puberty and then deteriorate are diagnosed as having *juvenile paresis*. In both types, treatment is ineffective, and prognosis is very unfavorable.

Sclerotic Amentia.—This form of amentia, which is responsible for less than 1 per cent of mental deficiency, is characterized by an overgrowth of *neuroglia*, the network of structures that supports the nervous elements of the brain. The etiology is unknown. When the overgrowth of supporting cells is limited to certain circumscribed areas of the brain, the condition is called *tuberous sclerosis*. The main symptoms are pronounced mental defect, convulsions, and fatty tumors of the face. When the overgrowth of neuroglia involves large areas of the brain, the disease is referred to as *diffuse sclerosis*. In such cases the skull may be greatly enlarged. This form of amentia can be differentiated from hydrocephaly by the shape of the head and skull (36).

Amaurotic Family Idiocy.—Also known as *Tay-Sachs disease*, this is a rare form of amentia occurring in about 1 out of 500 institutionalized mental defectives. It is essentially a neurological disorder characterized by diffuse degeneration of brain cells, which leads to progressive blindness, wasting of the limbs, and mental enfeeblement. Although an infantile and a juvenile form have been described, the symptoms are the same, the only difference being the age of onset. The disease is inherited as a Mendelian recessive. It is never transmitted directly from patient to offspring, because death generally occurs before puberty. The only mode of transmission is through the mating of persons who, although free of overt symptoms, are carriers of the defec-

tive genes. Almost all of the cases that have been described have been the offspring of intermarrying pedigrees or of consanguineous matings. In this country the disease has been confined primarily to Jewish children, but its occurrence has been noted in other groups. The infantile form appears to be more common among Jews; the juvenile form occurs mainly among non-Jews (33).

Phenylpyruvic Oligophrenia.—The presence of phenylpyruvic acid in the urine of less than 1 per cent of mental defectives has recently been reported by several investigators. These cases show relatively similar motor anomalies and are usually classified as idiots or imbeciles. Preliminary data suggest that this is a hereditary type of mental deficiency, determined by a single pair of recessive genes (12).

Other Rare Forms.—In addition to the types discussed above, there are a number of rare forms of mental deficiency that are mainly of interest to the specialist. A detailed description of these medical curiosities has been furnished by Tredgold (36).

IDIOTS SAVANTS

Mental defectives possessing exceptional talents or aptitudes are somewhat misleadingly described as *idiots savants*. They are neither idiots nor savants. Usually they are high-grade imbeciles or morons, and their talents, judged by normal standards, are either mediocre or are limited to some special memory feat that has no practical value. There is also a good probability that many so-called *idiots savants* are really schizophrenic patients. The condition is rare.

Many large institutions have one or two patients who possess good mechanical ability, are proficient in drawing or music, or have excellent memories. A more dramatic talent, observed in a few defectives, is the ability to state the day of the week of any calendar date. If asked what was the day of the week on Sept. 10, 1905, they will give the correct answer—Sunday—within 5 to 10 seconds. This also applies to future dates. One patient, when asked on what day Mar. 20, 1952, would fall, correctly answered "Thursday" in three seconds.

Several cases of this type have been studied in Europe, and the author has examined three such cases in this country. These three cases had IQ's ranging from 45 to 68. On arithmetic tests all scored below the fourth-grade level. How they calculate the date with as little intelligence and arithmetical ability is a mystery. When asked to explain their method, some refuse to tell. Others, intentionally or otherwise, give a confused account. One method is described below.¹ It would appear from the speed with which these very defective individuals arrive at the date that they must use some simpler procedure, involving perhaps the memorizing of certain key days. One patient, when asked to explain his method in writing, promptly filled a whole sheet with figures indicating the day of the week for Feb. 29 from 1900 to 1976, and the various years during the twentieth century on which Abraham Lincoln's birthday fell on a Sunday.

AMENTIA AND CRIME

Most mental defectives never come into conflict with the law, but the available data suggest that the incidence of delinquency and minor criminal offenses is slightly higher for the feeble-minded group than for the general population. In interpreting the higher incidence of criminality among the feeble-minded, some allowance must be made for the fact that defective offenders are more easily apprehended than offenders possessing average or superior intelligence. Also, the great majority of defective delinquents are morons, who, as has been mentioned earlier, tend to come from poor, deteriorated neighborhoods having high delinquency and crime rates. All factors considered, it is doubtful whether the incidence of antisocial behavior among mental

¹ Procedure for determining the day of the week for any calendar date from 1900 through 1999. Assign a code number of 0 to April and July; 1 to January and October; 2 to May; 3 to August; 4 to February, March, and November; 5 to June; 6 to September and December; except in leap years when January has a value of 0 and February has a value of 3. To the code number of the month add the day of the month, the last two figures of the year, and the number of leap years that have occurred in that century. Divide the total by 7. The remainder represents the day of the week, starting with Saturday as 0, Sunday as 1, etc. Thus if the remainder is 3, the day would be Tuesday.

defectives is significantly higher than that of the community in which they live. In any event, defective intelligence is a contributory, rather than a direct, cause of misconduct.

As in the case of individuals of average intelligence, the causes of delinquency in mental defectives are complex and often deep seated. Some misconduct is probably due to a lack of understanding of what is right and wrong, or to a poorly developed moral sense. However, in many instances the defective realizes that his behavior is socially and morally offensive but engages in it nevertheless. The act satisfies some momentary impulse which he is incapable of inhibiting, or he makes no attempt to control it because of his indifference to, or inability to foresee, the consequences of the act.

A feeble-minded child who is tormented or abused by other children or adults may retaliate with acts of cruelty or wanton destruction of property. A defective boy may engage in petit larceny to obtain some desired object or money. Defective girls sometimes engage in sexual offenses, without a thought of possible consequences, to satisfy their own sexual drives, to please a casual acquaintance, to encourage male attention, or as payment for a good time. Except when exploited by more intelligent men and women, it is relatively uncommon for young defective girls to engage in purely commercial prostitution. Sex relations are usually conducted on a personal basis, with money a secondary consideration.

AMENTIA AND MENTAL DISEASE

About 3 per cent of psychotic patients annually admitted to hospitals for mental disease are mental defectives (22). Since less than 3 per cent of the total population are feeble-minded, it may be concluded that mental diseases are at least as prevalent among mental defectives as among individuals of average intelligence. A few psychotic defectives suffer from manic-depressive psychosis, schizophrenia, or organic psychoses; but, as a general rule, the psychotic disturbances of mental defectives are of an acute transitory nature, marked by episodes of excitement with depression, paranoid trends, or hallucinations.

TREATMENT AND PROGNOSIS

There is no cure for mental deficiency in the usual sense. Feeble-minded children do not outgrow their mental retardation as they reach maturity. No amount of training or medical care will transform a mentally defective child into a normal child. On the other hand, outcome is by no means as dismal and hopeless as is generally believed. With suitable training and guidance, the majority of morons are capable of some degree of profitable employment and social self-management, and almost all lower types may be taught habits of personal cleanliness, elementary self-care, and favorable social traits. To be effective, conduct and personality training should be started early and must be continuous. Progress is slow and often discouraging, but the results in terms of the improved welfare of the child, his family, and society are well worth the effort. Through systematic training, good physical care, and careful supervision, potentially helpless, unhappy, and troublesome defectives, who are social liabilities and a source of annoyance to their families, may be transformed into contented, well-behaved, and often useful members of the community.

Parent Education.—The first step in the treatment of the mental defective consists in educating the parents to accept the child's limitations and the permanency of his mental defect. Frequently, parents stubbornly refuse to admit that there is anything wrong with their child. Even when they realize that their child is obviously subnormal, they firmly believe that with special educational training and medical attention he can be made normal. They waste valuable years waiting for the child to become normal and often spend large sums of money having him examined by countless specialists in the hope that some magic cure will be found. In such cases it is usually helpful to point out to the parents that they can improve the child's happiness by providing a good home and arranging for his future welfare through proper personality and vocational training.

Home Training.—The home is the natural place for the beginning of training, since almost all mental defectives live in

their own homes during infancy and the great majority continue to live at home even as adults. With the exception that they require much more time and patience, the training of feeble-minded children does not differ greatly from that of normal children. Of major importance is the emotional attitude of the mother. Some mothers reject and ignore their defective offspring, and others are overprotective to the point of depriving the healthy siblings in the family of their share of her attention and affection. Ideally, the emotional relationship between a mother and her defective child should be the same as that between a mother and a normal child.

Making allowances for the defective child's slowness in learning and poor memory, the mother should make every effort to teach the child to feed and dress himself, talk, walk, and acquire habits of personal cleanliness. As the child grows up, he should be assigned responsibilities and duties that are within his mental limits. Special attention should be given to moral and personality training. Misdeeds and temper outbursts should be checked and every attempt made to develop a pleasant disposition. If there are normal children in the family, they should be encouraged by word and example to accept their defective sibling as a less intelligent, but equally important, member of the family. Opportunity for play with neighborhood children should be permitted, but care must be taken that the other children do not ridicule or exploit the defective child.

School Training.—Idiots and imbeciles are usually excluded from school attendance as ineducable, so that school training is limited mainly to morons. Since a six-year-old moron has a mental age of three to four years, it is often desirable to postpone sending defective children to school until they are about eight. They should then be placed in special classes with other feeble-minded or retarded children of somewhat similar age.

There are numerous advantages in placing mentally defective children in special classes. To begin with, they do not have to compete with brighter children and hence are not exposed to constant ridicule and the humiliation of failure. In special classes, they compete on equal terms with other students and thus experience some measure of achievement and success. Sec-

only, the curriculum of the special class can be adapted to the capacities of the students. The class may proceed at a slow pace with more emphasis on developing motor coordination, speech, and desirable social traits than on learning abstract and often incomprehensible school subjects. Thirdly, mentally defective children need more individual tutoring than average children, and special classes, being smaller, permit the teacher to devote more time and attention to the individual pupil.

Institutionalization.—Approximately 100,000 feeble-minded patients are currently confined in institutions for mental defectives, and annual admissions total about 10,000. These institutions are overcrowded and generally have long waiting lists, so that if more facilities were available, an additional 50,000 might be committed. Individuals sent to state schools and other institutions for defectives fall into two main groups. One group, made up chiefly of idiots and imbeciles, consists of young children, often physically handicapped, whose parents are either unwilling or unable to care for them at home. The second group, composed mainly of morons, consists of older children whose undesirable or delinquent behavior necessitates their segregation from society. A large number of the second group are discharged after a period of social and occupational training, but most of the former group remain in institutions until they die (22).

Family Care.—A more economical, and in many cases a more desirable, method of segregation than institutionalization is to place mental defectives under family care in rural homes. This practice, which has been in effect for many years in Belgium and other European countries, is gaining increasing popularity in this country (4).

Occupational Training.—This important aspect has been grossly neglected. Apart from a small number of defectives who are committed to institutions, mental defectives receive practically no systematic occupational training, in spite of the fact that higher grade defectives can be taught a variety of occupations that will make them partially or completely self-supporting (16). For example, male adult imbeciles, with training and supervision, can do simple farming, laundry, dairy, and kitchen work. Adult male morons can assist carpenters, bakers,

painters, tailors, shoe repairers, electricians, and deliverymen. In addition, they can do fairly complex farmwork, look after poultry and livestock, operate many kinds of machines, and work as common laborers. With training and supervision, adult female imbeciles can do simple domestic work, fold paper boxes, pack articles, and operate small punch presses. Adult moron girls are capable of high-grade domestic work, plain cooking, laundry work, simple dressmaking, and routine factory work. The fact that they are not so proficient in these occupations as normal individuals is offset by the fact that they are content to work for lower wages.

Legal Aspects.—Although the procedure varies somewhat in different parts of the country, defective children are usually committed to state-supported institutions on the recommendation of certified medical or psychological examiners. The superintendent of the institution generally retains the power to discharge or parole patients at his discretion. More than half of the states in the United States have laws prohibiting the marriage of feeble-minded persons, and a similar number have laws providing for the sterilization of defectives. These laws, however, are not actively enforced in many states.

The legal responsibilities of mental defectives are not clearly defined by statutes. Idiots and imbeciles are not permitted to make wills or administer inherited estates; a guardian usually being appointed by the court to look after the interests of the defective. Adult aments with mental ages under ten are generally not held strictly accountable for their criminal actions, but brighter defective offenders rarely receive special legal consideration.

Sterilization.—One frequently voiced "solution" to the problem of mental deficiency is the sterilization of all defectives so as to render them incapable of having children. However, the sterilization of all known defectives would not eliminate feeble-mindedness in succeeding generations.

If all mental defectives in the population were the offspring of feeble-minded parents, sterilization would be an effective measure. Close to one-half of the children of defective mothers are either feeble-minded or mentally retarded, and in those in-

stances where both parents are defective, almost all the children are mentally defective or retarded (26, 38). However, only a small proportion of mental defectives, certainly not more than 15 per cent, are born to parents of whom one or both are defective (2, 21). The remaining 85 per cent are either cases of acquired amentia or are the offspring of parents who themselves possess dull or normal intelligence but are the carriers of defective genes which, under certain conditions, favor the production of mental deficiency in some of their children. In other words, mass sterilization of all mental defectives in the present generation would result, at most, in a 15 per cent decrease in the next generation.

A second argument frequently advanced in favor of sterilization is that mental defectives are more prolific than normal individuals. This widespread belief is unconfirmed by *factual data* (29). Idiots and imbeciles rarely produce offspring. A few morons have large families, but the great majority are either childless or have fewer children than normal individuals.

Accepting the limitations of sterilization as a eugenic measure some authorities have advocated the sterilization of imbeciles and morons on social grounds. This applies especially to girls. Unable to compete with normal men for female attention, defective boys rarely marry or produce offspring. Defective girls, on the other hand, frequently marry and often have children with or without benefit of clergy. If sterilized, high-grade defective girls can be permitted to lead happier and more useful lives in the community without the danger of their giving birth to illegitimate or legitimate children for whom they are unable to provide proper care. If not sterilized, promiscuous defective girls must be institutionalized at great expense for the entire period of their reproductive years. Favorable results with the use of sterilization as a social measure have been noted in California, where it has been extensively practiced on mental defectives for many years (28).

Other Preventive Measures.—There is some hope that many cases of acquired amentia may be prevented in the future by medical advances and improved infant care. In this category are mental defects associated with syphilis, birth injuries, endocrine dysfunctions, and various infectious diseases. It is not

improbable that many children with borderline intelligence can be prevented from becoming mental defectives, as judged by social and economic standards, if they are reared from birth in favorable home surroundings and given adequate social and occupational training.

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CHAPTER XVIII

ANTISOCIAL PERSONALITIES AND CRIME

Criminal behavior may be defined as antisocial conduct that violates established laws and entails some penalty. What constitutes a crime varies with time and place. During prohibition, the sale of alcoholic beverages was a crime, but after repeal it ceased to be one. In our civilization, adultery is an antisocial act, but it would be inhospitable for an Eskimo to refuse to share his wife with his guest. Treason, murder, incest, and theft are almost universal crimes, but there are exceptions even with regard to these. The surest single generalization that may be made is that society regards as criminal all acts that endanger or interfere with the welfare and preservation of society or transgress established customs and individual rights.

Juvenile Delinquency.—Crimes committed by children and adolescents under statutory age are referred to as *delinquencies*. The maximum age limit varies, but in most states offenders under sixteen or eighteen are classified as *juvenile delinquents*. As defined by the Pennsylvania Juvenile Court Act: "A delinquent child is one who has violated any law of the Commonwealth or ordinance of the city; a child who by reason of being wayward or habitually disobedient, is uncontrolled by his parent, guardian, custodian, or legal representative; a child who is habitually truant from school or home; or a child who habitually so deports himself as to injure or endanger the morals or health of himself or others."

The incidence of juvenile delinquency varies greatly in different communities. In large metropolitan areas, about 2 per cent of the children of school age are referred each year to juvenile courts as alleged delinquents and 1 per cent of the school-age population are adjudged delinquent (47).

The range of offenses committed by delinquents is somewhat

greater than that for adult criminals. It includes all forms of adult crimes plus a few distinct juvenile offenses such as truancy. Certain types of offenses, particularly crimes against the person, are noted more frequently among adult criminals. As a general rule, courts are inclined to be more lenient in disposing of juvenile delinquency cases, but the antisocial acts of young offenders are sometimes as serious as those of adults.

Classification of Crimes.—With respect to their relative seriousness, crimes are divided into *treason*, *felonies*, and *misdemeanors*. Treason, the most severe and infrequent type of crime, consists in levying war against one's country or in giving aid and comfort to the enemy. Felonies are serious crimes such as murder, manslaughter, forgery, aggravated assault, fraud, robbery, burglary, and rape, punishable by death, imprisonment, or heavy fines. Misdemeanors are minor offenses. Some examples are larceny, drunkenness, disorderly conduct, and vagrancy. Persons convicted of misdemeanors are generally committed to city or county jails or are discharged upon payment of a moderate fine.

The number of persons annually convicted of misdemeanors is many times greater than that for felonies. However, because of the mild nature of most misdemeanors, studies of crime are usually based on felonies and the more serious misdemeanors that involve incarceration in a state or Federal prison. A distinction is also often made between crimes against property and crimes against the person. The former, which comprise about 95 per cent of known crimes, include larceny, embezzlement, burglary, and auto theft. Murder, manslaughter, assault, and rape are the principal crimes against the person.

Incidence.—The most reliable index of crime in the United States is furnished by the *Uniform Crime Reports* of the Federal Bureau of Investigation. These reports indicate that more than 1,500,000 known major offenses are committed each year. During 1941 about 1 per cent of the adult male population were arrested and fingerprinted (48).

Statistics based on the movement of prison population are unsatisfactory indicators of the extent of crime, since only a small

proportion of offenders are sentenced to prison. Nevertheless, the figures serve to emphasize the seriousness of crime as a national problem. A total of more than 250,000 men were incarcerated in state and Federal penal institutions during 1940. Expressed as a ratio of the general population fifteen years and over, this means that, exclusive of commitments to city and county jails, approximately 1 out of 200 men in the total population was a prisoner during that year (31).

Sex.—Relatively few females are convicted of crime or delinquency. Approximately 85 per cent of children referred to juvenile courts, 90 per cent of adult arrests, and 95 per cent of prisoners in penal institutions are males (8, 31, 48). Some possible explanations for the low crime rate of females are the greater passivity of women, the greater exposure of men to crime-producing situations, and differences in cultural training. An additional factor is the greater leniency of police officials and courts toward female offenders. With respect to sex differences, a higher percentage of girls than boys are referred to juvenile courts because of truancy, running away, ungovernability, and sex offenses. A greater percentage of boys than girls are referred because of theft of various sorts and mischievous behavior.

Sex differences with respect to felony commitments to state and Federal prisons are summarized in Table VIII. A higher proportion of women than men are convicted of murder, manslaughter, aggravated assault, sex offenses other than rape, drug-law violations, and nonsupport or neglect. A higher proportion of males are convicted of robbery, burglary, and auto theft. The percentage distributions for larceny, embezzlement, and forgery are about the same for the two sexes.

Age.—Antisocial behavior of an illegal nature is largely restricted to the first half of life. The onset of delinquent behavior in children usually occurs in the early teens, and the majority of delinquents referred to juvenile courts are under fifteen years of age (8). The peak age for adult arrests is between eighteen and twenty-one, and the majority of prisoners committed to state and Federal penal institutions are under twenty-eight (48, 31).

TABLE VIII. NATURE OF OFFENSES COMMITTED BY MALE AND FEMALE FELONY PRISONERS ADMITTED TO STATE AND FEDERAL PRISONS DURING 1942¹

Offense	Per cent distribution		
	Total	Male	Female
Murder	3.4	3.3	5.8
Manslaughter	2.8	2.6	9.0
Robbery	8.1	8.3	3.3
Aggravated assault	5.9	5.7	9.2
Burglary	15.6	16.1	4.0
Larceny	17.2	17.1	18.0
Auto theft	6.7	6.9	1.4
Embezzlement and fraud	3.3	3.3	2.7
Forgery	6.2	6.2	6.1
Rape	3.6	3.8	0.0
Other sex offenses	2.6	2.5	5.9
Violating drug laws	2.9	2.7	6.9
Nonsupport or neglect	1.3	1.1	6.1
Violating liquor laws	8.5	8.5	6.5
All other offenses	11.9	11.9	15.1
Total	100.0	100.0	100.0

¹ From *Prisoners in state and federal prisons and reformatories, 1942*, U. S. Dept. Commerce. Washington: U. S. Govt. Printing Office, 1945.

BIOLOGICAL FACTORS IN CRIME

Heredity.—No person is inevitably destined to become a criminal because of his heredity. In selected cases, however, the inheritance of unfavorable physiological and mental traits may increase the probability that a person will engage in illegal acts if he is exposed to life situations that encourage criminality. The significance of heredity is most marked in cases of persistent criminality and in those cases where criminal tendencies are associated with personality defects. On the other hand, heredity is probably of negligible importance in most mild or isolated

offenses, especially when they are committed by persons having essentially normal personalities.

The evidence in support of heredity is based on family and twin data. More than 50 per cent of the adult offenders studied by the Gluecks (11) came from families having a criminal record. Although suggestive, this finding is not conclusive, since family investigations reflect the combined effect of hereditary and environmental influences. More precise information is obtained from an examination of twin data. In a summary of several studies, Rosanoff (33) noted that when one twin was a criminal, the co-twin was also a criminal in 70 per cent of the identical, and in only 33 per cent of the fraternal, pairs examined. The significantly higher concordance rate for identical twins emphasizes the importance of heredity. The contribution of environment is also apparent in the fact that in 30 per cent of the identical-twin cases, only one member engaged in crime.

Heredity plays a less important role in juvenile delinquency than in adult criminality. Only about 20 to 25 per cent of delinquents come from families having criminal records (7, 17, 18). In a study of like-sexed twins, Rosanoff and his associates (33) found that both members of a pair were delinquent in 93 per cent of the cases involving identical twins and in 80 per cent of those involving fraternal twins. The high agreement in concordance rates between the two types of twins favors environment as the main cause.

Physical Findings.—During the last part of the nineteenth century, Lombroso, an Italian physician, advanced the theory that criminals possessed a greater number of physical traits of an atavistic or apelike nature than did the general population. Among the "stigmata of degeneration" listed were high, pointed head, low, retreating forehead, large, outstanding ears, asymmetry of the head, and projecting eyebrows. These stigmata were regarded by Lombroso (23) as evidence supporting the biological basis of criminal behavior, but allowance was made for the contribution of social and psychological factors in facilitating or restraining the overt commission of criminal acts.

Damaging evidence against the Lombrosian doctrine was presented in 1913 by Goring (16). This English investigator re-

ported that stigmata of degeneration were as common among university students and army men as among habitual criminals. More recently, the Lombroso theory of biological inferiority has been revived by Hooton, an American worker (21). His findings, however, have received limited acceptance and extensive criticism (27).

Neuroendocrine Data.—In anatomical detail, the brains of unselected criminals do not differ from those of law-abiding individuals, and the brain waves of the two groups are likewise indistinguishable. Attempts to demonstrate a causal relationship between endocrine imbalance and criminality have been unsuccessful. Brain peculiarities and endocrine abnormalities are occasionally noted in criminals, but similar deviations are also present in the general population (32).

SOCIAL FACTORS IN CRIME

Social Disorganization.—In both primitive and contemporary society, it has been observed that the stability of the social order is an important controlling factor in the incidence of crime. No society, however stable, is totally free of criminals, but fewer violators appear in stable, isolated, and homogeneous communities than in disorganized, migratory, and heterogeneous population groups. Rural areas display less criminality than do urban areas. Towns situated at the outskirts of metropolitan areas tend to have lower crime rates than the city proper.

Shaw (36) and other investigators have demonstrated the presence of differential crime and delinquency rates in various areas within the city. The highest rates are found in the physically deteriorated and disorganized slum areas in and around the center of the city. With a few accountable exceptions, the incidence of crime in other areas decreases as the distance from the central core of the city increases, and the lowest rates occur in the peripheral residential districts. The significance of these observations has been well evaluated by Reckless (32). Social disorganization, dislocation of population, urbanization, and slum areas do not cause crime, but they indirectly encourage criminality by increasing opportunities for antisocial behavior. P33011

Family Disruption.—The family life of delinquents and criminals is characterized by disorganization, discord, and general instability. Most investigators (7, 38) have found that delinquents, more often than nondelinquents, are reared in homes broken through desertion, divorce, separation, or the death of one or both parents. The interpretation that may be attached to these data is somewhat limited, however, since only one-fourth to one-half of delinquents come from broken homes. Also, some workers (37) have observed that the incidence of broken homes among carefully selected nondelinquent control groups is about the same as that for delinquents.

More important than the absence of one or both parents is the presence of unfavorable intrafamilial tensions and conflicts that produce psychologically broken homes. As noted by several authorities (1, 7, 18), delinquents rarely come from happy homes with a wholesome emotional atmosphere. They usually are unloved, insecure, poorly supervised children whose parents are frequently immoral and unstable. They are often overprotected by one parent and excessively disciplined by the other. Many delinquents have stepparents or are reared in orphanages and foster homes. Illegitimate birth is not uncommon. The absence of sympathetic understanding and strong affection in the families of offenders is confirmed by the large number of delinquents and criminals who leave home at an early age.

Marital-status records supply further evidence with regard to the disrupted home life of criminals. With age held constant, the incidence rate of imprisonment for divorced men and women is several times greater than that for the married population. To a lesser degree, this is also true of the widowed group. For all ages beyond twenty-five, single men have higher commitment rates than married men, but single and married women of all ages have approximately the same rates (43).

Economic Aspects.—The majority of criminals and delinquents come from poor homes and are either unemployed or engaged in unskilled and low-income occupations. Although the low economic status of the criminal may be an incentive to offenses against property, it is questionable whether poverty or unemployment are important direct causes of crime. The rela-

tive unimportance of these factors is best demonstrated by the fact that only a small proportion of poverty-stricken or unemployed persons turn to crime as a solution to their economic difficulties.

Studies correlating volume of crime with business cycles and fluctuations in industrial employment indicate that the interrelationship between crime and economic factors is much more complex than it seems on the surface. In a summary of several investigations, Sellin (35) concluded that depressions and periods of unemployment tend to increase the number of crimes against property, especially those involving violence, but have a negligible or inconsistent influence upon other offenses. Data based on crimes reported to the FBI, annual arrests in Massachusetts, and juvenile court figures all show a gradual increase in the incidence of serious crimes in this country up to the beginning of the depression of 1929. During the depression years, there was a decrease, and an upward trend coincided with the beginning of the recovery (40).

Race.—No race is inherently more criminal than any other. Cultural traditions and restrictions, together with environmental influences, may, however, increase or decrease the frequency of law violations and determine the nature of offenses committed by a particular racial group. Thus one-third of the Chinese arrested during 1941 in this country were charged with violating narcotic drug laws, but this offense was responsible for only a fraction of 1 per cent of the white and Negro arrests (48).

As is indicated in Table IX, the incidence of crime among American Negroes, as measured by commitment to state and Federal prisons, is more than three times as high as that for whites for each corresponding age group. Other indices, such as arrest data and juvenile court figures, confirm these findings. The incidence of delinquency among Negro children in Philadelphia, for example, is about four times as high as that for white children (47). In interpreting the excessive delinquency and criminality of Negroes, most criminologists place greater emphasis upon the environmental difficulties faced by Negroes in this country than upon any inborn criminal proclivity. As an unfavored minority group that is often denied equal eco-

conomic and social privileges, Negroes are exposed to more temptations to engage in criminal behavior, run greater risks of being arrested by the police, and are more liable to severe prison sentences. There is some evidence that in all-Negro communities the Negro crime rate is markedly lower than in mixed population groups (32).

TABLE IX. NUMBER OF NATIVE WHITE, FOREIGN-BORN WHITE, AND NEGRO MALE FELONY PRISONERS RECEIVED BY PRISONS IN THE UNITED STATES DURING 1940, EXPRESSED AS A RATE PER 100,000 OF THE CORRESPONDING POPULATION¹

Age	Rate per 100,000 population		
	Native White	Foreign-born White	Negro
15-19.....	113	126	396
20-24.....	206	251	759
25-29.....	156	165	614
30-39.....	117	85	437
40-49.....	70	47	221
50-59.....	38	25	128
60-69.....	19	9	62
70 and over.....	6	3	26

¹ Prison data obtained from *Prisoners in state and federal prisons and reformatories, 1940*, U. S. Dept. Commerce. Washington: U. S. Govt. Printing Office, 1943.

Foreign-born Whites.—Articles emphasizing the criminality of European immigrants are long on theory but short on facts. As early as 1910, the Immigration Commission (49) reported that the foreign-born in the United States were more law-abiding than the native-born. Subsequent investigations (50) have consistently shown that first-generation immigrants, in spite of their minority status, culture conflicts, and transfer from a rural to an urban environment, have at least as favorable a criminal record as the native-born white population. As shown in Table IX, a smaller proportion of foreign-born than native-born whites

over thirty years of age are committed to prisons for felonies. Below age thirty, the incidence rate is in favor of the native white population.

The Second Generation.—With the decline of the theory that the foreign-born contribute unduly to crime, there has recently arisen a new myth that the children of the foreign-born are especially susceptible to criminal behavior. Before any conclusions can be reached with respect to the relative criminality of second-generation immigrants and that of the native-born of native parentage, it is essential that the two groups be carefully equated with respect to age, sex, social status, degree of urbanization, economic status, and other factors that are known to influence volume of crime. Unfortunately, detailed data of this nature are not available, but the two most comprehensive studies reported to date give no support to the theory that the children of immigrants have high crime rates (39, 50).

War.—Data based on European military conflicts during the nineteenth century and during the First World War indicate that male adult criminality decreased in belligerent countries. However, the crime rate for females and juveniles in warring countries, and for adults of either sex in nonbelligerent countries, increased. Offenses by men in belligerent countries probably decreased because a large proportion of the men were in the armed forces and thus prevented from engaging in criminal activity (24).

The crime trend during the Second World War was in agreement with that of previous wars. In England and the United States, the war resulted in a decrease of male adult criminality, because of the withdrawal of draft-age men from the community, and an increase of juvenile delinquency. Early reports greatly exaggerated the increase in delinquency rates. Actually, there was some increase, but it was mainly an increase in minor offenses that were not serious enough to warrant commitment to an institution or probation (47). Factors contributing to the increase were the dislocation of home life, lax parental supervision, disruption of schools, and employment of minors. When corrective measures were taken, the delinquency rates tended to decrease (4, 20, 25).

PSYCHOLOGICAL AND PSYCHIATRIC FACTORS

Intelligence.—The intelligence of apprehended criminals and delinquents is slightly lower than that for the general population. Especially among incarcerated youthful offenders, there is usually a higher percentage of mental defectives and a smaller percentage of mentally superior individuals than in the general population. This is partly due to the fact that the dull offenders are easily apprehended and the bright ones are more apt to escape detection. A second explanation is the inferior social background of delinquents and criminals. Most offenders are poorly educated and come from poor cultural areas. The intelligence of their law-abiding associates and neighbors is also below average.

When criminals are compared with the general population of comparable educational and cultural status, no significant differences in intelligence are observed between the two groups (38, 46). The mean IQ of delinquents is 10 or more points lower than that for the general population, but it is about equivalent to that of the nondelinquent brothers, sisters, and neighbors of delinquents (28). Since the intelligence of delinquents and criminals does not differ significantly from that of their law-abiding associates and neighbors, it may be concluded that in general, antisocial behavior is relatively independent of intelligence.

Neuroses.—Personality inventories and clinical observations indicate that delinquents and criminals are somewhat more neurotic than the general population, but the differences are not very marked (28). The types of neuroses seen in offenders are similar to those noted in nonoffenders. With the exception of a few crimes that are outward manifestations of neuroses, for example kleptomania, pyromania, and Peeping Tom reactions, neurotic criminals commit the same offenses as do the nonneurotic (51).

Psychoses.—Psychotic individuals who commit criminal offenses are classified as criminally insane. Although there is no infallible test, insanity is determined in modern courts, mainly by having qualified psychiatrists examine offenders suspected of being mentally deranged. To establish a defense on the

grounds of insanity, it is usually necessary to prove that at the time of the criminal act, the accused party was laboring under such a defect of reason from some mental disease that he did not comprehend the nature and quality of the act he was doing. If he did know it, he did not realize that he was doing wrong or, because of some irresistible impulse, he could not abstain from doing what is considered wrong.

Criminals adjudged insane are not held responsible for their offenses. In most progressive states they are sent to special institutions for segregation and treatment rather than for punishment. Recent studies indicate that only 1 to 2 per cent of convicted offenders are psychotic (6, 9). Since a similar proportion of the general adult male population are annually incapacitated by a mental disease, it would appear that psychoses are no more prevalent among the criminal than the noncriminal population. A comparison of the types of offenses committed by sane and insane criminals shows that the criminal insane commit a higher percentage of offenses against the person, including homicide, assault, and sex offenses. Sane criminals commit a higher percentage of crimes against property. All the varieties of mental disease exhibited by law-abiding psychotics are also noted in the criminal insane, but because of the youthful age of offenders those mental diseases occurring primarily after thirty-five are less prevalent in the criminal group (9).

Psychopathic Personality.—Individuals possessing average or superior intelligence who are neither neurotic nor psychotic but, at the same time, are social misfits and borderline mental cases are labeled *psychopathic personalities* or *constitutional psychopathic inferiors*. This is a general psychiatric category that includes pathological liars, sexual perverts, tramps, amoral individuals, misanthropes, eccentrics, and certain types of emotionally unstable individuals. Relatively little is known concerning the cause of this disorder. It is generally assumed that constitutional factors, consisting of hereditary defects and disturbed parent-child relationships in early childhood, play important roles.

Psychopathic personality is too broad a category to define

precisely. Rather than attempt a general and somewhat vague definition, we have listed the most outstanding characteristics of this disorder (10, 19, 26).

CHARACTERISTICS OF PSYCHOPATHS

1. Intelligence is not affected, and the symptoms do not correspond to those noted in psychoses or psychoneuroses.

2. The unchecked pursuit of pleasure, expressed by the immediate gratification of needs and desires irrespective of consequences to self or others, is the dominant life motive. All means justify the end, no matter how personally harmful, unscrupulous, or illegal they may be or how much suffering they entail for relatives and friends. In this respect psychopaths resemble spoiled children.

3. Because of the emphasis on immediate satisfactions regardless of consequences, their actions appear to others to indicate lack of foresight, poor judgment, and inability to profit from experience.

4. From early childhood, psychopaths exhibit disorders of conduct of an antisocial or asocial nature. They are constantly at odds with the world. They resent discipline and refuse to conform with accepted ethical and moral standards. Not only are they thoughtless of the welfare of others; they also seize every opportunity to deceive and exploit associates. They do not hesitate to repay kindness with meanness. Devoid of honor and a sense of fair play, they experience no genuine remorse for their misdeeds.

5. Their lives lack stability, direction, and tenacity of purpose. Their ambitions are poorly defined and constantly shifting. They change jobs frequently, and many lead a nomadic existence.

6. In their emotional responses, psychopaths are generally described as cold, callous, shallow, cruel, infantile, and flighty. They seem to have little control over their emotions, and their reactions are unpredictable. Trivial incidents produce rapid swings from elation to depression and from calmness to explosive anger or panic.

7. Sexual development is usually retarded or abnormal. Perversions of all types are common, and these are accepted without shame or conflict. Marriages are transient affairs that generally end in failure.

8. Many have ingratiating and charming manners that enable them to make favorable impressions on their victims; others are aggressive and quarrelsome; and still others are weak, passive, inadequate individuals. Almost all are selfish, stubborn, and egocentric.

Military data indicate that about 1 per cent of the male adult population are psychopaths (34). The incidence among women is probably lower. Many psychopathic personalities manage to avoid hospitalization or imprisonment. Consequently, only about 2 per cent of first admissions to mental hospitals, and 15 to 20 per cent of incarcerated criminals, are classified as psychopathic personalities (30, 51). The types of crimes committed by these individuals do not differ greatly from those of prisoners in general. The present medicolegal viewpoint is that psychopaths are capable of distinguishing right from wrong and therefore are responsible for their conduct. On the other hand, it is recognized that most of these individuals are incurable. Threats, imprisonment, and psychotherapy have slight, if any, effect.

INTERPRETATIONS OF ANTISOCIAL BEHAVIOR

Psychoanalytic Theories.—In their interpretation of criminal behavior, psychoanalysts have emphasized the importance of unconscious motives and repressed mental conflicts. Thus a person may enter upon a criminal career in order to satisfy a need for punishment growing out of some unexpiated misdeed of early childhood. A repressed sexual wish may be indirectly gratified by some substitute forbidden and exciting act, such as stealing. A secret hatred of the father may be expressed by a general defiance of authority, and a feeling of inferiority may be compensated for by sensational criminal exploits. Regardless of their validity or applicability to other than a few neurotic offenders, these theories make the study of the criminal mind much more interesting.

According to psychoanalysts, normal individuals as well as criminals harbor destructive and antisocial impulses. The difference between the two is that criminals give in to their impulses and normal individuals repress their antisocial drives or seek an outlet in socially harmless activities. A corollary of this theory is that society insists upon severely punishing the criminal because he openly engages in acts that law-abiding citizens would also like to commit but dare not. In punishing the apprehended criminal, we not only settle our grudge with him, but also, by

the severity of the punishment, strengthen our defense against our own criminal temptations (2).

Crime and Adjustment.—Crimes are committed by individuals, and the cause of crime is best sought in the adjustment of the individual to his environment. When an individual finds it difficult or impossible to satisfy his wants and desires in a direct and socially acceptable manner, he is faced with the alternative of renouncing his motives or attempting to find substitute satisfactions. Criminal behavior, like psychoneuroses and other forms of abnormal reactions, is an indirect and irrational attempt to satisfy human wants and adjust to discomforting or frustrating situations. When good solutions are not available, some persons react by developing personality disorders. Others engage in antisocial behavior of a criminal nature. In short, crime is an individual affair, and there are as many causes of crime as there are sources of individual discontent and frustration.

Attempts to prove that one factor or another is the cause of crime have all failed because there is no common cause. Crime is always the resultant of the interaction of multiple personal and external factors, and the nature of these factors varies in individual cases. Unfavorable heredity, low intelligence, personality imbalance, unsatisfactory parent-child relationships, broken homes, low socioeconomic status, cultural conflicts, social disorganization, and a host of other factors that have been advanced at one time or another as causes of crime—all are potential sources of crime or delinquency. In specific instances, they may so handicap the individual or so obstruct his attempts at self-expression or adjustment to life problems as to create a situation favorable for the appearance of criminal behavior.

The interpretation of crime as a form of adjustment to inner and outer motivating forces has been ably defended by Thomas (45). He reduced human motives to four basic wishes, namely, desire for new experiences, security, recognition, and response from others. Under certain circumstances, especially when normal channels of expression are blocked, individuals may resort to criminal behavior in order to satisfy these wishes.

On the basis of their intensive study of delinquent and non-delinquent siblings, Healy and Bronner (18) also concluded that

delinquency was a mode of giving expression to urges and desires. Delinquents differ from their nondelinquent siblings because at some stage of their development they have been blocked in their needs for satisfying human relationships in their family circle. The lack of satisfying human relations, together with its resultant feelings of inadequacy and deprivation, forces the individual to seek substitute satisfaction in delinquency.

THE ADMINISTRATION OF CRIMINAL JUSTICE

Arrest and Conviction.—After a person suspected of having committed a crime has been arrested, he is brought before a magistrate for a preliminary hearing. The magistrate may discharge the accused person or refer him for a grand-jury investigation. On the basis of the evidence submitted to it by the district attorney, the grand jury may discharge the accused person or indict him. If indicted, he is brought before a court and is informed of the charges against him. He may plead guilty to the charges, in which case he is sentenced by the court without a trial; or he may plead not guilty and be tried by a jury. If the trial jury returns a verdict of guilty, the convicted person is sentenced by the court.

The terms of the sentence depend upon the laws covering the specific offense. In general, convicted persons are fined, placed on probation, or sentenced to a penal institution. Approximately one-third of persons convicted and sentenced for major offenses in this country are placed on probation. An additional 35 to 40 per cent are committed to prisons and reformatories. The remainder are sent to local jails or receive other sentences (22).

Probation.—At the discretion of the court, a person convicted of certain crimes may have his sentence suspended. Instead of being sent to prison, he is released on probation. The purpose of probation is to treat and supervise "good risk" offenders in the community. It is a form of rehabilitation without imprisonment.

While on probation, the convicted person is under the jurisdiction of the court. If he should violate the conditions of proba-

tion or commit new offenses, the court may revoke probation and proceed with the execution of the prison sentence. However, if the probationer makes a good record over a reasonable period of time, the court may grant a discharge that usually frees the convicted person from its jurisdiction.

Imprisonment.—Whether a convicted person is committed to a jail, state prison, or Federal prison is determined by the nature of the offense and the length of the sentence. Jails and workhouses mainly receive mild offenders who have been given short sentences. Most jail terms are for less than a year. Persons receiving longer sentences for more serious offenses are usually sent to state prisons if they have violated state laws and to Federal prisons if they have violated Federal laws.

Prison sentences may be definite or indeterminate. A definite sentence specifies the length of time that must be served before a prisoner is released. However, the stated period may be shortened by "good-time" deductions earned through good behavior in prison. An indeterminate sentence has a stated minimum and maximum term. The indeterminate sentence has been developed along with the use of parole.

The purpose behind both measures is to give prison and parole authorities greater freedom in deciding when a prisoner is ready for release to society. If a prisoner has a meritorious record in prison and the chances are favorable that he will be able to adjust in the community, he may be granted a parole after serving the minimum term or less. While on parole, he lives in the community but continues to be under custody, and he may be returned to prison to complete his sentence if he violates the conditions of his parole.

On the other hand, if a prisoner is a poor risk, he may be detained in prison until he has completed the maximum sentence minus "good-time" and other deductions. The time spent in prisons by felons before release is variable. Of all felons discharged each year, about 10 per cent have served less than eight months, and a similar proportion have served more than five years. The median time served by released felons is about 18 months (31).

Release Procedures.—The prison population is constantly changing. More than 95 per cent of all prisoners are returned to society at some time, and the number of offenders discharged from state and Federal prisons each year is approximately equal to the number of persons annually admitted. From 35 to 40 per cent of discharged prisoners are released following the expiration of their sentence, and 55 per cent are released before the expiration of their sentence, by means of parole and other forms of conditional release. About 1 per cent of discharged prisoners receive pardons or commutation of sentence (31).

Parole.—After serving a portion of his sentence in a penal or correctional institution, a prisoner may be released on parole. While on parole, the offender continues under the custody and supervision of the state, and the conditions of his release permit his reincarceration in the event of misbehavior. Unlike probation, which is granted in place of imprisonment, parole follows a period of imprisonment. A distinction must also be made between parole and pardon. A pardon is an executive act of grace which frees and forgives the offender and absolves him of all consequences of his act. A parole does not involve forgiveness and it is not an act of leniency.

Parole and other methods of conditional release possess several advantages over the older methods of releasing prisoners unconditionally following the completion of their sentence. A prisoner released following the expiration of his sentence usually is left to shift for himself. Lacking supervision and assistance in social and occupational adjustment, he frequently returns to the society of his former associates and resumes his criminal activities. Even if he makes a poor adjustment on the outside, he ordinarily cannot be returned to prison unless he is arrested for some new offense, tried, and convicted. A paroled prisoner, on the other hand, is still under legal restraint. He is supervised by parole officers who aid him in solving the vocational, social, and personal problems that may arise in making the transition from prison to a free society.

To protect society and encourage good conduct, the conditions of parole generally specify that the parolee shall not violate the law or associate with persons having bad reputations. The pa-

rolec must remain within designated areas, engage in some lawful occupation, and support his dependents. If he should violate the conditions of parole, he may be promptly returned to prison. From the viewpoint of the prisoner, parole constitutes an incentive to work for an early discharge, and it permits release from prison to be made at an opportune time with regard to the psychological condition of the offender.

TREATMENT OF CRIMINALS

Until comparatively recent years, the treatment of criminals was essentially limited to punishment. Punishment, including hard labor, harsh living conditions, solitary confinement, and strict discipline, was intended to serve many purposes. To begin with, it was a form of revenge or retribution for willful wrongdoing. Secondly, criminals were supposed to be so impressed by the severity of the punishment that they would reform. Thirdly, it was assumed that punishment would deter others from engaging in crime.

Punishment proved a failure on all three points, but it continued to dominate penal practice for many years. Although vestiges still remain, the doctrine of punishment is gradually being modified. Prisoners are still incarcerated, but under more favorable conditions. A more understanding and constructive attitude toward the criminal is slowly appearing. It is now accepted among progressive prison authorities that custodial care is only part of their responsibility. They must, in addition, attempt to resocialize and rehabilitate the criminal. The present trend is to study each prisoner as an individual and to provide him with the treatment, training, and supervision necessary for his restoration to society as a self-supporting and law-abiding citizen.

Some of the main features of this new approach are listed below (3). Greatest progress in translating these objectives into practice has been made in Federal prisons and in institutions for delinquents.

1. The granting of probation whenever possible to youthful and first offenders. Many first offenders are accidental criminals

who break the law by chance or mishap. Experience has shown that if sent to prisons, these individuals are frequently converted to a life of crime as a result of their association with hardened criminals and by exposure to the unfavorable influence of the prison regime. If they are kept out of prison and carefully supervised by competent probation officers, they usually become law-abiding citizens.

2. The segregation of prisoners in institutions adapted to their needs. Prisoners vary in the type of supervision and training they require. Psychotic and mentally defective prisoners, for example, are best confined for long periods in special institutions. Some convicts, including incorrigibles, require maximum custody; others respond best if given minimum custody.

3. More humane treatment in prison. Harsh treatment in prison often destroys all that is good in man and leads to embitterment toward society. The modern policy is to treat prisoners like human beings. Corporal punishment, solitary confinement, rule of silence, and other extreme methods of punishment have been to a large extent abandoned. The old-time disciplinary regimes that frequently precipitated riots have been replaced by a more constructive discipline based on firmness combined with understanding and fairness. Living conditions and the quality of the food have been greatly improved. Security is still maintained, but more desirable personnel have been employed who function more as supervisors and instructors than as guards.

4. More effective and well-rounded institutional program. In the old-type prisons, inmates were usually idle or partially occupied with routine maintenance duties. Vocational, educational, and recreational facilities were extremely limited. The new prison places great emphasis on utilizing the prison term to prepare the prisoner for successful adjustment when released. Through a well-planned work program, supplemented by special vocational training, inmates are taught useful occupations. They are given an opportunity to improve their education by attending classes and making use of library facilities. The program is balanced by liberal recreational activities, which relieve the monotony of the prison routine and at the same time have com-

siderable therapeutic value in providing emotional outlets and aiding in the resocialization of prisoners.

5. General improvement in custodial care, social service work, medical and psychiatric treatment, classification, religious guidance, parole supervision, and other professional services. This has been largely brought about by the introduction of competitive civil service examinations and the adoption of merit systems for appointments and promotions.

6. The more constructive use of the indeterminate sentence and parole. Since prison authorities are in a better position than the judge to decide how long it is desirable to treat and reeducate prisoners before they are released, the indeterminate sentence has played an important role in rehabilitation. When combined with an adequately administered parole system, it has proved to be the most effective method yet devised for releasing offenders and assuring their good behavior in the community.

PROGNOSIS IN ADULT CRIMINALITY

Older Methods.—The failure of old prison methods to reform criminals is well illustrated by the fact that about 50 per cent of male felons annually committed to state and Federal prisons in the United States have a history of one or more previous jail or prison terms (31). In tracing the postdischarge careers of 500 male convicts over a period of 15 years, the Gluecks (13) found that 80 per cent of the men whose conduct could be ascertained had committed offenses during the first five-year period following their discharge, and 61 per cent had served new prison sentences as the result of such offenses.

A subsequent check of the original group over a second and third five-year period indicated more favorable results. Approximately 30 per cent of the located men whose behavior could be fairly estimated did not engage in crime during the second and third five-year period, as compared with 20 per cent for the first five-year period. In addition, many of the men who had committed serious offenses during the first period engaged in only minor offenses during subsequent periods (15). The Gluecks attribute the crime decrease to the benign influence of maturation

through aging. In comparing the group that reformed with the passing of the years with the group that continued to recidivate, the most marked difference was found to lie in the factor of mental and emotional difficulties. Of the men who reformed, only 15 per cent were burdened with some mental abnormality, as opposed to 90 per cent of those who continued to engage in crime.

Data based on prison admissions suggest that recidivism is less marked in women. Less than 30 per cent of female felons committed to state and Federal prisons in the United States each year are officially listed as having a previous penal record (31). Follow-up studies, however, show that although female offenders are less frequently committed to prisons, their conduct after release is almost as unfavorable as that of men. In examining the postdischarge careers of female prisoners, the Gluecks (12) found that 76 per cent had engaged in crime during the five-year period following their release from custody.

Probation.—Despite the fact that many states have inadequately staffed and poorly administered probation systems, the results obtained have been very encouraging. Data based on a national survey indicate that from 60 to 80 per cent of probations are successful. About 40 per cent of probationers violate the conditions of their release, but only 20 per cent have their probations revoked. For first offenders, outcome is even more favorable. Approximately three-fourths of those cases rated as successful during the period of probation continue their good behavior after release from probation (32, 41). In interpreting these somewhat optimistic figures, one must keep in mind that probations are granted primarily to milder offenders who in the opinion of the courts are capable, with supervision, of rehabilitation in the community.

Parole.—The majority of studies indicate that approximately 75 per cent of parolees successfully complete their parole without violating the terms of their prison release or engaging in new offenses during the parole period (42). The favorable results obtained during the parole period amply justify the continuation and extension of parole as a form of treatment, but it should not be inferred from the above figures that parole results in the

permanent rehabilitation of three-fourths of criminals. Under present laws, all parolees are eventually discharged, and many who make good adjustments as long as they are under supervision return to crime when released from parole. One solution to the problem of recidivism might be to prolong the parole period even beyond the maximum sentence imposed by the courts. Since the crime rate decreases sharply after thirty-five, a reasonable program might be to keep serious offenders on parole until they attain this age.

TREATMENT AND PROGNOSIS OF JUVENILE DELINQUENTS

Treatment.—At the present time, the procedures for handling juvenile delinquents are more rational and progressive than those for adult offenders. When referred to court, children are usually examined informally. The emphasis is upon understanding and helping the individual child rather than punishing him. Many cases are disposed of unofficially through interviews and conferences with the parties concerned. The more serious cases are tried in juvenile courts. Juvenile court judges have wide discretionary powers, and their decisions are not rigidly bound by statutes. Depending on the nature of the offense and the past history of the offender, the judge may dismiss the delinquent with a warning, place him on probation, or sentence him to a reformatory, industrial school, or camp. Close to 50 per cent of cases disposed of by juvenile courts each year are dismissed or adjusted; between 30 and 35 per cent are placed on probation or otherwise supervised; 10 per cent are committed to correctional institutions for indefinite periods; and the remaining cases are settled in other ways (8).

Although sound in theory, the programs developed for correcting delinquents are often ineffectively put into practice. Probation, for example, is a desirable procedure, but it assumes that probation officers are well trained and have adequate time and facilities for their work. Actually, many are poorly trained, and they usually have so many clients that it is impossible for them to give satisfactory individual supervision. Delinquents

referred to child guidance clinics are well examined. Most clinics, however, limit their work to diagnosis and recommendations, and the recommendations are rarely carried out.

In most modern institutions today, delinquents have considerable freedom, are well cared for physically, receive adequate educational and vocational training, and are given an opportunity to engage in recreational and social activities. As soon as feasible, they are released to the custody of parole officers and civic groups, who assume responsibility for continuing the rehabilitation program in the community. However, even the best institutions are unable to satisfy the emotional needs of delinquents; and as supervision during parole is usually lax, the consequence is that failures are common.

Prognosis.—Even when allowance is made for the fact that the more incorrigible delinquents are committed to institutions, the results obtained from follow-up studies of incarcerated delinquents are rather disappointing. In investigating the after-careers of boys who had been committed to correctional schools approximately 10 years previously, Healy and Bronner (17) found that 44 per cent had court records. A survey conducted by Bowler and Bloodgood (5) showed that 58 per cent of boys released from reformatories had been convicted one or more times within six to nine years after initial parole. Most offenses occurred soon after release, and with each succeeding year, the number still delinquent gradually decreased. As with adult offenders, aging appears to have an ameliorative effect (44).

Juvenile court figures and child guidance data also emphasize the high incidence of failures. About one-third of delinquents disposed of in juvenile courts each year have had previous court experience (8). In following the subsequent careers of a large number of boys examined in a juvenile court and a child guidance clinic, the Gluecks (14) found that the great majority did not reform. However, this study has been criticized on the grounds that the delinquents were not actually treated. In only a small proportion of the cases were the therapeutic recommendations made by the clinic carried out.

A sounder evaluation of the clinical approach has been reported by Healy and Bronner (18), who administered psychiatric

treatment to delinquents and checked their subsequent adjustment over a two-year period. The delinquents were divided into three groups, and outcome figures were reported separately for each group. Group I consisted of delinquents who presented marked personality deviations. Of this group, 58 per cent were delinquent during the follow-up period. Children who were confronted with unwholesome situations within or without the family made up Group II. Of this group, 46 per cent were delinquent. Delinquents who were not markedly neurotic or whose life situations did not present gross social pathology constituted Group III. Only 19 per cent of this group were delinquent during the follow-up period. In brief, this study showed that fundamentally well-balanced delinquents tend to have good outcome, whereas those handicapped by social pathology or personality abnormalities have poor prognosis.

THE PREVENTION OF CRIME

Although much still remains to be learned concerning the basic causes of crime and delinquency, it is possible on the basis of our present knowledge to sketch a blueprint for a prevention program.

1. The development of wholesome personalities in childhood. The roots of crime are apparently deeply embedded in the early history of the individual. Parents may discourage antisocial tendencies in their children by maintaining a favorable emotional atmosphere in the home, establishing friendly relations with their children, and carefully guiding their moral and character development. In the latter task, the church, the school, and the scout movement may also play important roles.

2. The early discovery and treatment of potential delinquents and criminals. Individuals do not become criminals overnight. Their history is one of gradual development. It is quite probable that many criminal careers could be cut short by prompt detection and guidance in the early stages.

3. The elimination of factors that favor crime. Within this category may be placed the removal of children from undesirable homes, the elimination of slum areas, the expansion of recrea-

tional facilities to provide wholesome activity outlets for underprivileged children, and the organization of boys' clubs to counteract the influence of gangs.

4. Vigilant supervision and strict law enforcement. The temptation to commit a crime is normally counterbalanced by fear of arrest and conviction. A potential offender will take a chance if he runs little risk of being apprehended and imprisoned, but he will frequently inhibit his criminal impulses if he realizes that he can't "get away with it." A strong, efficient police force and a strict court system will deter many borderline cases from criminal behavior.

5. Good government and legal reform. In many communities, the incidence of certain types of crime may be radically reduced by breaking the corrupt alliance that exists between crime and politics. The prohibition experiment provides a good example of how laws may influence crime. At the present time, many white-collar criminals manage to evade punishment because of inadequate laws.

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GLOSSARY

A-, An-. Prefixes signifying absence of, without.

Aberrant. Same as Abnormal.

Abnormal. Deviating from the usual or average; pathological.

Abnormal Psychology. The branch of psychology that is concerned with
(1) the study of the mental processes and behavior of abnormal people and
(2) the study of unusual psychological phenomena.

Abreaction. The release of pent-up feelings associated with repressed memories through action and overt emotional expression (A psychoanalytic concept)

Abulia. Absence of will power; indecision

Acromegaly. A physical disease marked mainly by gradual enlargement of the bones of the face, hands, and feet in adult life. Associated with dysfunction of the pituitary gland.

Acrophobia. Intense fear and anxiety when on high places.

Affect. Used as a noun, a general term for emotion, mood, or feeling.

Affective Psychosis. A mental disorder in which emotional disturbances predominate, as in manic-depressive psychosis or involuntional melancholia.

Agitated Depression. A condition marked by mental depression with psychomotor overactivity. Usually associated with involuntional melancholia.

Agoraphobia. Abnormal fear of being alone in a wide-open space

Alienist. A physician who specializes in the medicolegal aspects of mental disease.

Amaurotic Idiocy. A hereditary neurological disease marked by progressive muscular enfeeblement, blindness, and mental deficiency. An infantile and a juvenile form have been noted.

Ambivalence. Simultaneous existence of contradictory emotions toward the same person or object, for example, mixed love-hate feelings

Ambivert. A mixed personality type intermediate between introvert and extrovert; the most prevalent type

Amentia. Same as Mental Deficiency

Amnesia. A memory disorder characterized by inability to recall past experiences or personal identity.

Anal Eroticism. According to psychoanalysts, an early stage in the sexual development of infants, at which time sexual interests and pleasures are concentrated in the anal region.

Analgesia. Total or partial loss of sensitivity to pain.

Anamnesis. A detailed history of the patient, including family background, personal development, and onset of disease.

Anesthesia. Total or partial loss of sensitivity to touch stimuli.

- Anorexia.** Loss of appetite.
- Anxiety Hysteria.** A form of hysteria in the Freudian classification. Principal symptoms are unreasonable fears and anxiety.
- Anxiety State.** A common psychoneurosis characterized by emotional overreaction. Main features are morbid apprehension, tension, and physical symptoms associated with emotional distress.
- Apathy.** Morbid indifference; marked absence of emotional response to situations that normally evoke some feeling or emotion.
- Aphasia.** Loss of ability to understand and appropriately use spoken or written language symbols as a result of some brain disease or injury.
- Aphonia.** Loss of ability to make vocal sounds, with no language impairment.
- Apraxia.** Loss of ability to manipulate objects or execute purposive movements.
- Astasia-abasia.** Loss of ability to stand or walk, with capacity retained for moving legs while sitting or lying down.
- Asthenic Type.** A slender, bony body build, with flat chest, long extremities, and small trunk (Kretschmer).
- Ataxia.** Marked disturbance in the coordination of voluntary muscular movements.
- Athletic Type.** A well-developed, muscular physique (Kretschmer).
- Atrophy.** Wasting or shrinking of an organ or muscle with accompanying decrease in its functional efficiency. Ⓞ
- Aura (epileptic).** A subjective sensory experience that may precede and serve as a warning for an epileptic convulsion.
- Auto-eroticism.** A psychoanalytic concept referring to the early fixation of the sex drive on the physical self, with gratification obtained from the stimulation of one's own bodily organs.
- Automatism.** A complicated act, often repetitive, which is engaged in without conscious intent.
- Benign.** Mild, as opposed to malignant.
- Catatonia.** A form of schizophrenia characterized by stupor or excitement. Common symptoms are negativism, stereotyped movements, mutism, and muscular rigidity or waxy flexibility.
- Catharsis (mental).** In psychoanalysis, the purging of the mind through the overt expression of repressed unpleasant memories and associated emotions.
- Censor.** In psychoanalysis, the personified portion of the Ego that prevents the unpleasant ideas and disagreeable memories of the unconscious mind from entering and disturbing the conscious mind.
- Cerebral Arteriosclerosis (Psychosis with).** A mental disease of old age, associated with hardening of the cerebral arteries. Main symptoms are headaches, mental confusion, irritability, depression, and memory disturbances.
- Cerebrotonia.** A component of temperament which when predominant results in a sensitive, seclusive, introverted individual (Sheldon).

- Chromosome.** The subdivision of the nucleus of a germ cell that contains the genes.
- Claustrophobia.** Morbid fear when in a small or enclosed space.
- Clinical Psychology.** A field of psychology that is mainly concerned with (1) the application of psychological tests and techniques in educational and vocational guidance and (2) the treatment of mild personality and behavior disorders.
- Coma.** A state of profound stupor or unconsciousness with complete insensibility from which the patient cannot be aroused.
- Combat Fatigue.** A general term, coined during the Second World War, for mental disorders, especially the psychoneuroses, that were precipitated by prolonged exposure to battle conditions. A better classification is *war neuroses*.
- ✓ **Compensation.** A mental mechanism by which one attempts to conceal from the self or to minimize or make up for some undesirable trait by developing or exaggerating some desirable or more approved trait.
- Complex.** A group of emotionally charged ideas that have been partially or completely repressed into the unconscious because of their troublesome nature.
- Compulsion.** An involuntary, irresistible impulse to do or say something against one's will or better judgment.
- Confabulation.** A memory disorder in which a patient, spontaneously and without conscious intent to deceive, fills the gaps in his memory by relating imaginary experiences which he accepts as true.
- ✓ **Conflict (Mental).** A painful state of mind resulting from frustration or a clash between contrary wishes.
- Congenital.** Present at birth but not necessarily hereditary.
- Constitution.** The basic physical and mental make-up of the individual, mainly inherited, which determines his reactive potentialities and his resistance or susceptibility to disease.
- Conversion Hysteria.** A psychoneurosis characterized primarily by psychogenic loss of sensory and motor functions. According to Freud, a repressed emotional problem is converted into a physical symptom that has no physiological basis.
- Convulsion.** A sudden attack of short duration characterized by loss of consciousness and followed by a series of violent muscular contractions involving usually the whole body. An epileptic fit.
- Cortex.** The outer layer of an organ. Usually refers to the outer gray cells of the brain.
- Cretinism.** A condition associated with thyroid deficiency in early infancy; marked by dwarfism and feeble-mindedness.
- Cycloid.** A type of personality. Cycloids have periodic mood swings from depression to exuberance, are sociable, extroverted, and practical-minded. According to Kretschmer, cycloids usually have pyknic physiques.

Defense Mechanisms. Conscious or unconscious reactions designed to minimize or avoid sources of mental distress.

Delirium. A disturbed state of consciousness, usually of short duration
Characterized by disorientation, illusions, hallucinations, and restlessness.

Delirium Tremens. An acute delirium resulting from alcoholism. Main / symptoms are tremors, intense fear, and hallucinations.

Delusion. A fixed, obviously false belief which is not in keeping with the individual's cultural training and which cannot be corrected by argument or presentation of reliable evidence.

Dementia. A psychotic condition marked by profound mental deterioration.

Dementia Praecox. Same as Schizophrenia.

Deterioration. Progressive impairment of mental functions and feelings.

Dipsomania. A periodic uncontrollable craving for alcoholic beverages.

Disorientation. Inability to correctly orient or locate oneself with respect / to time, place, or person as a result of mental confusion.

Displacement. The mechanism whereby an emotion originally associated with an idea or object is transferred to some neutral and inappropriate idea or object.

Dissociation. Disintegration of the main personality resulting in the splitting off of groups of ideas. Disparity between the intellectual and emotional life.

Dizygotic Twins. Same as Fraternal Twins.

Dual Personality. The dissociation of the personality into two alternating and somewhat independent personalities.

Dysplastic Type. A poorly proportioned physique (Kretschmer).

Echolalia. Involuntary automatic repetition of words spoken by another person.

Echopraxia. Involuntary automatic imitation of gestures or movements made by another person.

Ectomorphy. A component of physique which, when predominant, results in a slender, somewhat fragile body build (Sheldon).

Ego. The conscious self that is aware of personal experiences and in touch with reality.

Electra Complex. A peculiar daughter-parent relationship. The daughter is in love with her father and hates her mother (Freud).

Electroencephalogram. A record obtained from amplifying and recording the electrical activity of brain cells.

Electroshock. A form of shock therapy involving induction of convulsions by passing an electric current through the intact skull.

Encephalitis Lethargica. Sleeping sickness, an epidemic form of inflammation of the brain. Initial signs are, usually, high fever and drowsiness. Residual psychological and physical symptoms are often noted.

Endomorphy. A component of physique which, when predominant, results in a body build that is soft, fat, and round (Sheldon).

- Epilepsy.** A neurological disorder involving periodic sudden attacks of short duration. Characterized by partial or complete loss of consciousness with or without convulsions and other psychomotor disturbances.
- Epileptic Equivalent.** A variety of symptoms, including violent excitement, moodiness, or dreamlike states that are considered substitutes for the usual epileptic seizure.
- Eros.** In psychoanalysis, the name assigned to the life forces, particularly the libido, or sex drive.
- Erotic.** Pertaining to sex or love.
- Etiology.** The science of the causes and origin of disease.
- Eugenics.** The science concerned with the modification of the human race through the application of the principles of heredity and selective mating.
- Euphoria.** An exaggerated feeling of well-being or happiness.
- Exhibitionism.** Self-display, particularly the exposure of the body as a means of obtaining sexual excitement and pleasure.
- Experimental Neurosis.** Abnormal behavior experimentally induced in animals or human beings. Usually induced by difficult discrimination problems.
- Extrovert.** A type of person who directs his energies and interests outside himself, enjoys social activities, and expresses himself in action. (Derived from Jung.)
- Feeble-mindedness.** See Mental Deficiency.
- Fetish.** Any object, such as a glove, which through association becomes a sex symbol capable of arousing erotic feelings.
- Fever Therapy.** The induction of fever by malaria inoculations, chemicals, or various electrical devices, for therapeutic purposes. Used in the treatment of general-paralysis patients.
- Fixation.** In psychoanalysis, the arrest of psychosexual development at some childhood level.
- Fraternal Twins.** Twins originating from the fertilization of two ova by two separate sperm cells. They may be of the same sex or of opposite sexes. Same as Dizygotic Twins.
- Free Association.** An important technique in psychoanalytic treatment. Patient reports all ideas and impulses regardless of their significance. Regarded as a means of access to the unconscious mind.
- Fugue.** A psychological and geographical flight. For a period of time the patient forgets who he is, assumes a new personality, and leaves his usual environment. Following recovery, the patient has no recollection of his experiences during the fugue period.
- Functional Psychoses.** Severe mental disorders that have no definite or demonstrable physiochemical pathology. Diagnosis is based on disturbances in function. Two examples are schizophrenia and manic-depressive psychosis.
- Ganser's Syndrome.** Nonsensical speech and behavior. Sometimes noted in hysteria and in mental disorders occurring among prisoners.

- General Paresis.** A psychosis resulting from progressive brain pathology produced by syphilis. Characterized by a variety of mental and neurological symptoms. Diagnosed by chemical analysis of the blood and spinal fluid.
- Genes.** Chemical entities within the chromosomes that are the determiners of inherited traits.
- Globus Hystericus.** A hysterical symptom characterized by a choking sensation. Patient experiences sensations as if a ball were in his throat.
- Grand Mal.** A form of epilepsy characterized by loss of consciousness, a fall, and a convulsion.
- Hallucination.** A sensory preception experienced in the waking state in the absence of any corresponding external stimuli; for example, hearing a non-existent voice.
- Hebephrenia.** A form of schizophrenia characterized by peculiar mannerisms, silliness, bizarre behavior, and hallucinations.
- Heterosexuality.** The mature stage of psychosexual development, when sexual interests and desires are directed toward a person of the opposite sex.
- Homosexuality.** Sexual attraction and love for or between individuals of the same sex.
- Hormone.** A secretion of an endocrine gland.
- Huntington's Chorea.** A hereditary neurological condition characterized by involuntary, purposeless, jerky movements, and gradual mental deterioration. Onset of symptoms occurs in middle life.
- Hydrocephalus.** Excessive accumulation of fluid in spaces inside or outside the brain, resulting in enlargement of the skull. Condition frequently associated with brain injuries and mental retardation.
- Hydrotherapy.** Use of water, especially baths, in the treatment of disease.
- Hyper-.** Prefix meaning "increased," "over-," or "excessive." Opposite of *hypo-*.
- Hypnoanalysis.** A psychotherapeutic technique which utilizes hypnosis as an aid in psychoanalytic treatment.
- Hypnosis.** An artificially induced trance state marked by heightened suggestibility and automatic compliance, within moral limits, to the instructions of the hypnotist.
- Hypo-.** Prefix meaning "reduced," "less," or "under-." Opposite of *hyper-*.
- Hypochondriasis.** Exaggerated concern and anxiety regarding physical or mental health, particularly in the absence of actual illness.
- Hysteria.** A form of psychoneurosis characterized by psychogenic loss of sensory or motor functions, loss of memory, and dissociation states. Classified as conversion hysteria in the Freudian system.
- Id.** In psychoanalysis, the personified representative of the unconscious. The Id has many of the traits associated with the popular conception of the beast in man.
- Ideas of Reference.** A delusion characterized by perceiving meaning, unfavorable to the self, in the casual remarks or acts of others.

- Identical Twins.** Twins resulting from the fertilization of a single ovum by a single sperm cell. The cell subsequently divides to form two identical individuals who are always of the same sex. Synonymous with Monozygotic Twins.
- Identification.** A mental mechanism whereby an individual, without conscious awareness, satisfies frustrated desires by psychologically assuming the role or some of the traits of another person.
- Idiocy.** The lowest grade of mental deficiency. Regardless of their age, idiots never attain a mental age of more than three years.
- Idiopathic Epilepsy.** Convulsive disorders of unknown origin. Synonymous with essential epilepsy. Heredity considered the basic cause.
- Idiots Savants.** Mental defectives possessing special talents or aptitudes.
- Illusion.** A false perception of a real sensory impression; for example, mistaking a twisted branch for a snake.
- Imbecility.** An intermediate grade of mental deficiency. The IQ's of imbeciles range from 25 to 50.
- Individual Psychology.** Alfred Adler's system of psychology, which emphasizes the importance of inferiority feelings and compensatory activities.
- Inferiority Complex.** A distressing state of mind associated with acute feelings of inadequacy and insecurity that are based on real or imagined defects.
- Insanity.** A vague legal term for psychoses.
- Insight.** Self-understanding. Appreciating and objectively interpreting personal defects and symptoms.
- Intelligence Quotient.** An index of relative brightness. Obtained by dividing a child's mental age by his chronological age and multiplying the quotient by 100.
- Introvert.** A type of person who directs his energies and interests within himself. Prefers solitary activities. (Derived from Jung.)
- Involitional Melancholia.** A psychosis of undetermined origin occurring mainly between the ages of 40 and 60. Main symptoms are despondency, agitation, ideas of guilt, delusions of self-depreciation, and suicidal tendencies.
- Juvenile Delinquent.** A child or adolescent who engages in antisocial or illegal behavior.
- Kleptomania.** A recurring and uncontrollable compulsion to steal insignificant and useless articles.
- Korsakoff's Psychosis (Korsakow).** A form of alcoholic psychosis associated with vitamin B₁ deficiency. Main symptoms are defective memory, confabulation, disorientation, jovial mood, and minor neurological disturbances. Korsakoff syndrome also noted in other toxic disorders.
- Latent.** Dormant, inactive, concealed.
- Lesion.** A structural tissue change caused by a wound, injury, or disease.
- Libido.** A psychoanalytic term referring to the sex drive and its dynamic expression in all forms of love.

- Malingerer.** One who intentionally pretends to have some illness or disability for personal gain.
- Manic-depressive Psychosis.** A functional or constitutional mental disorder characterized either by excitement and elation or by depression with psychomotor retardation. Mixed states may also occur.
- Mannerism.** A stereotyped, recurring, peculiar gesture, posture, or movement that has no apparent purpose.
- Masochism.** A form of sex perversion in which an individual obtains sexual excitement and pleasure from being beaten or otherwise mistreated.
- Mechanisms (Mental).** A variety of defensive or escape procedures that aid an individual to adjust to disappointments and conflicts. Some examples are phantasy, rationalization, and projection.
- Mental Deficiency.** A condition of subnormal mental development, present at birth or early childhood. Characterized mainly by meager intelligence and social inadequacy.
- Mental Hygiene.** An educational movement concerned with (a) the prevention and treatment of nervous and mental disorders, and (b) the development of wholesome personalities for maximum efficiency and happiness.
- Mesomorphy.** A component of physique which, when predominant, results in a solid, muscular individual with large bones (Sheldon).
- Metrazol Therapy.** A form of shock treatment for mental disorders, involving the injection of the drug metrazol to produce convulsions.
- Microcephaly.** A pathological condition characterized by a very small head and brain. Microcephalics usually have IQ's under 50.
- Mongolian (Mongol).** A type of mental defective. Mongolian aments have certain facial characteristics that are superficially similar to those of Oriental people.
- Monozygotic Twins.** Same as Identical Twins.
- Morosity.** The highest grade of mental deficiency. Morons are usually regarded as having IQ's from 50 to 70.
- Multiple Personality.** A rare type of dissociation. At different times the same individual exhibits three or more somewhat independent personalities.
- Myxedema.** A condition resulting from thyroid deficiency in adults. Main symptoms are overweight, puffed facial features, psychomotor retardation, and mental sluggishness.
- Narcism.** Marked love of self. According to Freud, an early stage of psychosexual development.
- Narcosynthesis.** A technique for treating mental patients, based on the use of certain drugs, such as sodium amytal or pentothal, to facilitate the recall and expression of repressed emotions and memories.
- Negativism.** Impulsive, contrary behavior. Tendency to do the opposite of what is requested.
- Neologism.** The coining of new words that may have no apparent meaning. Usually produced by condensing and combining two or more words.

- Nervous Breakdown.** A popular term that has no specific meaning. May denote a psychoneurosis, a brief psychotic episode, or some other condition.
- Neurasthenia.** A psychoneurosis characterized by extreme fatigability and psychosomatic symptoms.
- Neurology.** The science that is concerned with the study of the structure and function of the nervous system.
- Neurosis.** Synonym for Psychoneurosis.
- Nyctophobia.** Morbid fear of the dark or night.
- Obsession.** A spontaneously recurring thought or impulse that persistently intrudes itself into the patient's mind even against his wishes.
- Occupational Neurosis.** A psychoneurosis in which the key symptoms center about the functional impairment of some occupational skill, for example, writer's cramp.
- Oedipus Complex.** A son-mother fixation. According to Freud, boys at certain ages have sexual desires for their mothers and hate their fathers.
- Oral-erotic.** An early state of psychosexual development when sexual pleasure is primarily obtained through nursing and other oral activities (Freud).
- Organic Psychoses.** Mental disorders resulting from some structural pathology of the brain.
- Orientation.** The locating of the self in the environment with respect to time, place, and person. Psychological bearings.
- Orthopsychiatry.** The study and treatment of minor personality and conduct disorders, particularly of young persons.
- Paranoia.** A functional or constitutional psychosis. Symptoms essentially limited to ideas of grandeur, well-systematized delusions of persecution, and ideas of reference.
- Paranoid.** Resembling paranoia. Paranoid schizophrenic patients express poorly systematized delusions of persecution and grandeur, frequently hallucinate, and gradually deteriorate mentally.
- Paresthesia.** An abnormal or peculiar sensation of the skin, for example, a tingling or burning sensation in the absence of any appropriate stimulus.
- Parole.** The release of a convicted criminal after he has served a portion of his sentence in a penal institution, under conditions that permit his reincarceration in the event of misbehavior.
- Pathological.** Abnormal, diseased, or morbid.
- Pellagra.** A vitamin-deficiency disease, characterized by alimentary-tract disturbances, patchy pigmentation of the skin, and varied neurological and mental symptoms.
- Personality.** The individual as a whole; his psychological and physical traits, characteristic patterns of behavior, reaction potentialities, and his impression on others.
- Perversion.** An abnormal or atypical act, particularly any form of sexual deviation.

Petit Mal. A mild form of epilepsy characterized by momentary loss of consciousness and an absence of convulsive seizures.

Phobia. A fixed, intense, uncontrollable fear that has no reasonable foundation.

Physiotherapy. The use of physical agents such as heat, electricity, and massage in the treatment of disease.

Pleasure Principle. The prompt gratification of pleasure and the avoidance of pain regardless of future consequences. Considered by psychoanalysts to be the motivating principle guiding the behavior of children and some psychoneurotics.

Preconscious. In psychoanalysis, that part of the mind which is the storehouse of unrepressed memories that are not conscious at the moment but can be readily recalled.

Presbyophrenia. A clinical form of senile psychosis. Main symptoms are gross memory impairment, confabulation, and disorientation.

Probation. A court procedure whereby a person convicted of a crime is given a suspended sentence and released under supervision instead of being sent to prison.

Prognosis. Prediction of the probable duration, course, and outcome of a disease or mental disorder.

Projection. A mental mechanism whereby a person indirectly conceals from himself his personal faults and socially disapproved motives by attributing them to others.

Psychasthenia. A form of psychoneurosis characterized by obsessive-compulsive reactions or morbid, unreasonable fears. The term is gradually becoming obsolete.

Psychiatry. The branch of medicine that is concerned with the study and treatment of mental diseases.

Psychoanalysis. A dynamic school of medical psychology developed by S. Freud. It emphasizes the importance of unconscious memories and impulses and the significance of repressed infantile sexuality in the production and interpretation of mental disorders. Also refers to a special form of psychotherapy.

Psychobiology. A psychiatric approach, sponsored by A. Meyer, that is concerned with the study and treatment of the individual as a whole, including biological, physical, psychological, and social factors.

Psychodrama. A diagnostic and therapeutic technique that utilizes play-acting as a means of aiding the patient to express and face his inner conflicts (Moreno).

Psychogenic. Of mental origin. Due to a disorder of function rather than to some organic pathology.

Psychoneuroses (Neuroses). A group of minor mental disorders characterized by inner struggles and discordant social relationships. Psychoneuroses are precipitated by faulty adjustments to difficulties and are most effectively treated by psychological techniques.

- Psychopathic Personality.** A catchall psychiatric category that includes a variety of unstable individuals with character defects who are not psychotic, psychoneurotic, or mentally defective.
- Psychopathology.** The science that is concerned with all psychological aspects of personality disturbances and mental disorders.
- Psychoses.** Major mental disorders involving profound thought, emotional, and personality disturbances that render a previously normal person incapable of adequate self-management or adjustment to society.
- Psychosexual.** A broad term that includes the psychological, social, and physical aspects of the sex drive.
- Psychosomatic Medicine.** A medical approach that stresses the importance of psychological and emotional factors in producing or accentuating physical symptoms.
- Psychotherapy.** Treatment of mental disorders, especially the psychoneuroses, by psychological techniques. Some psychotherapeutic procedures are advice, suggestion, and psychoanalysis.
- Pyknic Type.** A stocky, large-chested type of physical build. Other traits are full face, thick shoulders, rounded limbs, and short extremities (Kretschmer).
- Pyromania.** Compulsive recurring impulse to set and witness fires without thought of personal gain.
- Rapport.** A harmonious patient-therapist relationship marked by the patient's having complete confidence in the therapist.
- Rationalization.** A mental mechanism whereby an individual indirectly minimizes failure and justifies socially disapproved behavior by inventing excuses and "reasonable" explanations. The unwitting substitution of "good" for real reasons.
- Reaction Formation.** A mental process whereby an undesirable trait is kept in check through the development of a diametrically opposite trait.
- Reality Principle.** According to Freud, the motivating principle of the Ego that recognizes and is in accord with the needs and demands of the external world.
- Recidivism.** Recurrence of criminal behavior, especially after a period of imprisonment.
- Regression (Retgression).** Reverting to childish behavior when confronted with frustrations and disagreeable situations.
- Repression.** A mental mechanism whereby painful memories and socially disapproved impulses are automatically excluded from consciousness and confined to the unconscious.
- Resistance.** The inability or unwillingness of a patient to recall or discuss personal experiences.
- Sadism.** A form of sexual perversion. Erotic excitement and pleasure are obtained from beating or otherwise mistreating others.
- Schizoid.** A shut-in, asocial, reserved, introspective personality type (Kretschmer).

- Schizophrenia (Dementia Praecox).** A constitutional or functional psychosis that usually has its onset in early adulthood. Main symptoms are profound apathy, delusions, hallucinations, bizarre behavior, and mannerisms.
- Senile Dementia.** A psychosis of old age characterized by brain atrophy, progressive mental deterioration, and loss of memory.
- Shell Shock.** An inappropriate term coined during the First World War that was applied to mental disorders, especially psychoneuroses, that were precipitated by exposure to battle conditions. A better term is *war neuroses*.
- Shock Therapy.** Radical and traumatic procedures used in the treatment of certain psychoses. Some examples are metrazol, electroshock, and insulin therapy.
- Sibling.** A brother or sister.
- Somatic.** Pertaining to the body. Organic as contrasted with psychogenic.
- Somatotonia.** A component of temperament which, when predominant, results in a self-assertive, boisterous, aggressive individual (Sheldon).
- Somnambulism.** Sleepwalking. A trancelike state in which a person, while asleep, walks about and engages in complex activities that he does not remember on awakening.
- Stereotypy.** The persistent repetition of apparently senseless words, acts, or gestures.
- Sterilization.** A process whereby an individual is deprived of the power of reproduction, with ability to perform the sex act retained. Destruction of germs.
- Stupor.** A condition of partial or complete unconsciousness with extreme apathy, drowsiness, and psychomotor inactivity.
- Subconscious.** Below the level of conscious awareness but not necessarily synonymous with the concept of the unconscious.
- Sublimation.** A mental mechanism whereby the energy associated with thwarted sexual or aggression drives is diverted and released into higher level and socially more accepted activities.
- Super-ego.** In psychoanalysis, the personified part of the personality that corresponds to what is more popularly known as the "conscience."
- Suppression.** The intentional exclusion from consciousness of disagreeable or painful memories and impulses.
- Syndrome.** A group of clinical signs or symptoms that usually occur together and are often indicative of some disease or condition.
- Telepathy.** The transference of thought from one person to another without the use of sense organs.
- Therapy.** Synonymous with treatment.
- Tic.** A recurring involuntary muscular twitch or jerky movement.
- Toxic Psychoses.** Psychoses associated with, and probably due to, some injurious biochemical substances.
- Transference.** In psychoanalysis, the establishment of an emotional relationship between the patient and the analyst. The patient transfers to

the analyst affection or hostility that was formerly directed toward other persons.

Trauma. A wound, injury, or emotional shock.

Traumatic Psychoses. Mental disease associated with head injuries.

Unconscious. That part of the mind which contains repressed experiences and inherited primitive impulses (Freud).

Verbigeration. Monotonous and senseless repetition of words or phrases.

Viscerotonia. A component of temperament which, when predominant, results in an individual who is greatly interested in food, social activities, and personal comfort (Sheldon).

Voyeur. A Peeping Tom. An individual who obtains sexual stimulation and gratification by looking at sexual objects or situations.

War Neuroses. Psychoneuroses occurring among military personnel that are precipitated by exposure to combat or fear of such exposure.

Zoophobia. Unreasonable fear of harmless animals.

LIST OF VISUAL AIDS

The following list of visual aids can be used to supplement some of the material in this book. These films can be obtained from the producer or distributor listed with each title. (The addresses of these producers and distributors are given at the end of the bibliography.) In many cases these films can also be obtained from your local film library or local film distributor; also many universities have large film libraries from which these films can be borrowed.

The running time (min) and whether it is silent (si) or sound (sd) are listed with each title. All those not listed as color (C) are black and white. All motion pictures are 16mm.

Each film has been listed once in connection with the chapter to which it is most applicable. However, in many cases the film might be used advantageously in connection with other chapters.

CHAPTER II—MOTIVATION AND ADJUSTMENT

Balloons: Aggression and Destruction Games (NYU 20min sd). Demonstration of a projective technique for the study of aggression and destruction in young children.

Frustration Play Techniques (NYU 40min sd). Shows blocking games and frustration and hostility games; shows how children respond to intrusions, prohibitions, competitions, and frustration.

This is Robert (NYU 80min sd). Traces the development of an aggressive "difficult" child from two to seven years; shows reason for aggressiveness and corrective procedures.

CHAPTER V—INTRODUCTION TO THE PSYCHONEUROSES

Experimentally Produced Neurotic Behavior in the Rat (PCR 23min si). Technique of producing experimental neuroticism in the rat is shown.

The Role of the Hypothalamus in Emotion and Experimental Neurosis (PCR).

Part I—Conditioned Feeding Behavior in the Cat (17min si).

Part II—The Production of Experimental Neuroses in Cats (17min si).

Part III—The Role of the Hypothalamus in Conditioned Feeding Behavior (6min si).

Part IV—Direct Hypothalamic Conditioning (15min si).

CHAPTER X—INTRODUCTION TO THE PSYCHOSES

Convulsive Shock Therapy in Affective Psychoses (PCR 15min si). Shows recent progress in use of convulsive therapy with affective psychotic states.

Narcosynthesis (PCR 20min si). Shows use of drugs as aid in psychotherapy.

Prefrontal Lobotomy in Treatment of Mental Disorders (PCR 21min si). Deals with treatment of functional psychoses.

Psychiatry in Action (NYU 70min sd). Presents psychiatric techniques used in one of Britain's seven neurosis centers; portrays in detail many tests and different types of therapy.

CHAPTER XI—SCHIZOPHRENIA

Athetoid Gestures in a Deteriorating Parergasic (Schizophrenic) (PCR 16min sd). Demonstrates contrasting schizophrenic motility disorders.

A Parergasic Reaction (Schizophrenia) in a Person of Low Intelligence (PCR 16min sd). Shows stereotypic grimaces and speech vagueness, etc.; comparative study of motility disorders.

Catatonic Behavior in a Deteriorated Parergasic (Schizophrenic) Patient (PCR 8min si). Shows posture, hypertrophied neck muscles, ritualistic and stereotypic methods of eating.

Symptoms in Schizophrenia (PCR 15min si). Reviews common symptoms as they are exhibited by patients in the average mental hospital.

Prefrontal Lobotomy in Chronic Schizophrenia (PCR 19min si). Illustrates the improvement that can be obtained in chronic schizophrenia by presenting four cases.

CHAPTER XIII—INVOLUTIONAL MELANCHOLIA AND PARANOIA

Paranoid State and Deterioration Following Head Injury (PCR 14min sd). Tells story of mental-hospital patient, his rambling flow of talk that conveys disjointed, inconsistent, but dominant notions of persecution.

CHAPTER XV—TOXIC AND ORGANIC PSYCHOSES

Delusions and Hallucinations in a Senile Setting (PCR 8min sd). Shows patient demonstrating his imaginary power, and what a physical examination revealed.

CHAPTER XVII—MENTAL DEFICIENCY

Institutional Training (MINN 15min si). Depicts activities of school and kindergarten at Faribault School for the Feeble-Minded.

Institutional Care of the Feeble-Minded (Vineland 15min si). Modern institutional care of mental defectives is shown at the Vineland Training School.

Deficiency in Finger Schema—Agnosia and Acalculia (PCR 11min si). Describes deficiencies in counting and localizing the fingers by some feeble-minded boys.

Mental Defective—Glandular Types (Rutgers 15min si C). Lower grade Mongolians and cretins; characteristics and physical development.

Some Aspects of Feeble-Mindedness (MINN 75min si). Modern institutional care of mental defectives at the Faribault School and Colony.

The Least of These (NJ 15min si C). Presents historical changes in attitude toward feeble-mindedness; subtly portrays inmates' position in a modern feeble-minded colony.

The Feeble-Minded (MINN 60min si). Treats of feeble-mindedness from the standpoint of pathology; mentions possible organic conditions causing feeble-mindedness; shows difference between morons, imbeciles, and idiots; describes eight major pathology groups.

Measurement of Intelligence (CFC 15min sd). Demonstrates administration of the Stanford-Binet Scale to the thirteen-year-old boy.

Testing the I.Q. (Warden and Gilbert 13min si). Shows administration of form to two- to five-year-old children; nature of test materials; scoring standards and calculation of the I.Q.

Genetic Development of Children with Birth Lesions (Vineland 17min si). Outlines photographically the course of development of children with cerebral birth lesions; shows retardation of motor development in three youngsters.

SOURCES OF FILMS LISTED ABOVE

CFC—College Film Center, 84 E. Randolph St., Chicago 1.

Harmon Foundation—Division of Visual Experiments, 140 Nassau St., New York 7.

MINN—University of Minnesota, Bureau of Visual Instruction, Minneapolis 14, Minn.

NJ—State of New Jersey, Department of Instruction and Agencies, Trenton, N. J.

NYU—New York University Film Library, Washington Sq., New York 3.

PCR—Psychological Cinema Register, Pennsylvania State College, State College, Pa.

Rutgers Films—Rutgers University, Box 78, New Brunswick, N. J.

Stoelting, C. H., Co., 424 N. Homan Ave., Chicago 24.

Vineland Training School, Vineland, N. J.

Warden and Gilbert Psychological Laboratory, Columbia University, New York 27.

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